SVCW

PROJECT PLANNING REPORT

Civil Site Improvements

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FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

144 North San Mateo Drive • San Mateo, CA 94401
(650)344-9901 • Fax (650)344-9920 • www.freyerlaureta.com

SVCW
Silicon Valley Clean Water

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Front of Plant Civil Project Planning Report

Executive Summary

Freyer & Laureta (F&L) was selected by Silicon Valley Clean Water (SVCW) to research and provide project planning for the civil sitework at the SVCW wastewater treatment plant facility (WWTP). This civil sitework is required to support SVCW's Capital Improvement Program to improve the existing conveyance system. The SVCW plant is currently landlocked, surrounded by potential wetlands to the northwest, State lands/SF bay to the southeast, State lands/Steinberger Slough to the southwest, and two SVCW owned ornamental ponds to the southwest, artificially filled with recycled water by SVCW. These ponds are approximately 10-acres and 5-acres in size. In order to complete conveyance system upgrades, the 10-acre ornamental pond will be further developed.

As part of conveyance system upgrades, SVCW has planned and programmed improvements on plant property required to meet increased member agency projected flows, increase plant peak wet weather flow capacity, complete conveyance system upgrades, and to meet forthcoming nutrient removal requirements from the Regional Water Quality Control Board. Initial improvements programmed within the front of plant area include a new receiving lift station, headworks, flow diversion structure, odor control, and a storm water pump station. Civil site improvements are needed to support these new facilities including the stabilization of the front of plant, construction of paved site access and additional parking, grading and drainage including a stormwater pump station, utilities to serve each facility, paving surrounding new facilities, and storm drainage treatment facilities in an effort to meet State Water Board requirements. The conceptual rendering below shows the proposed improvements and their locations.

Executive Summary Figure 1 - Conceptual Site Rendering

To support the required civil work, the following tasks were performed and described in detail in this report. Detailed base reports are found in the appendix of this report.

- Base Surveys and benchmarking of plant datum
- Subsurface soils investigation
- Site grading for stormwater management
- Natural storm water treatment system conceptual design
- Construction staging area planning
- Construction sequencing

As an initial step an aerial and ground survey was performed using Plant Datum to plan new facilities relative to elevations and locations of existing plant infrastructure. Plant datum is described in a separate planning report attached to this report. This survey provided the elevations in the Front of Plant (FoP) area and the topographic survey map used as the base for site layout planning.

Subsurface soils also played a major role in site layout planning. Soil corrosivity and hazardous waste tests were performed at chosen locations. The results showed the soils to be highly corrosive but not hazardous. Along with the soil sampling to determine soil composition, cone penetration tests were performed to determine soil strength and to model the surface elevations and depth of Young Bay Mud. New facility locations were planned in areas where bay mud was the shallowest in depth. Soil at ground surface was found in need for stabilization prior to construction activity. Placement of the new facilities was coordinated with SVCW management, SVCW staff, and consultants selected to plan the receiving lift station, headworks, flow diversion, and odor control facilities.

Along with accounting for soil conditions, stormwater management for during construction and post construction was taken into consideration. The existing storm drain system serving the existing plant was modeled and found to be inadequate for handling the flows from the new developed area, however the current system can be used as interim storm drain collection during Front of Plant construction. To drain the front of plant properly, a new storm drain system will be developed that consists of new inlets, planters, and a pump station to discharge water to the adjacent 5-acre pond.

Construction sequencing was also planned for the site civil improvements and determined best to be constructed in three phases. The first phase would be to stabilize the soil in the front of plant area to allow for further construction activity. Lime treatment in areas planned to be paved and geofabric/fill in staging areas is planned for soil stabilization. Phase 1 work also included constructing a new asphalt concrete driveway and parking, installing utility crossings under the new driveway, and parking to avoid re-trenching across the newly paved areas. Preliminary grading and drainage, and installation of fencing and lighting is also included as civil sitework. The second phase would include construction of the new storm drain system as well as constructing utilities to each new facility. The final phase would complete

the site paving and landscape, complete pavement striping and site signage, and construction of a new frontage wall along Radio Road.

Improvements will be further developed in the design phase of this project. This design work will include additional survey to supplement the topographic map, further developing the site plan, continued coordination of site utilities, and additional soil testing needed for facility design.

Introduction

Silicon Valley Clean Water (SVCW) is a Joint Powers Authority (JPA) that owns and operates a regional wastewater treatment plant (WWTP) at the eastern end of Redwood Shores, within Redwood City, and related wastewater pumping and transmission facilities. SVCW treats the majority of the wastewater generated from the mid-peninsula of San Mateo County south of the San Mateo Bridge. The JPA members include the cities of Belmont, Redwood City, and San Carlos, and the West Bay Sanitary District (which provides sanitary sewer collection services to the cities of Menlo Park, Portola Valley, and portions of Atherton, Woodside, East Palo Alto, and unincorporated areas of San Mateo County).

As part of conveyance system upgrades, SVCW has planned and programmed improvements on plant property required to meet increased member agency projected flows, increase plant peak wet weather flow capacity, complete conveyance system upgrades, and to meet forthcoming nutrient removal requirements from the Regional Water Quality Control Board. The SVCW plant is currently landlocked, surrounded by potential wetlands to the northwest, State lands/SF bay to the southeast, State lands/Steinberger Slough to the southwest, and two SVCW owned ornamental ponds to the southwest, artificially filled with recycled water by SVCW. These ponds are approximately 10-acres and 5-acres in size and compose what is known as the Front of Plant (FoP) area. In order to complete conveyance system upgrades, the 10-acre ornamental pond will need to be further developed.

This planning report describes the civil site planning performed to date and the civil work anticipated to complete the project.

Background

SVCW is implementing a Capital Improvement Program (CIP) to improve the reliability of the conveyance system and the Waste Water Treatment Plant (WWTP). This CIP would better allow SVCW to operate efficiently, reliably, and to safely convey and treat wastewater from its four member agencies, Redwood City, the West Bay Sanitary District (WBSD), the City of San Carlos, and the City of Belmont. Currently, SVCW's existing conveyance system assets include four pump stations, one for each of the four member agencies, a wet weather booster station located in the San Carlos Pump Station, an influent lift station located at the WWTP, and an approximately nine-mile-long force main . During wet weather events when flows exceed conveyance system capacity, wastewater is stored at a remote Flow Equalization Facility (FEF) at the upstream end of the conveyance system in Menlo Park, which is leased from WBSD. Figure 1 schematically depicts the current conveyance system.

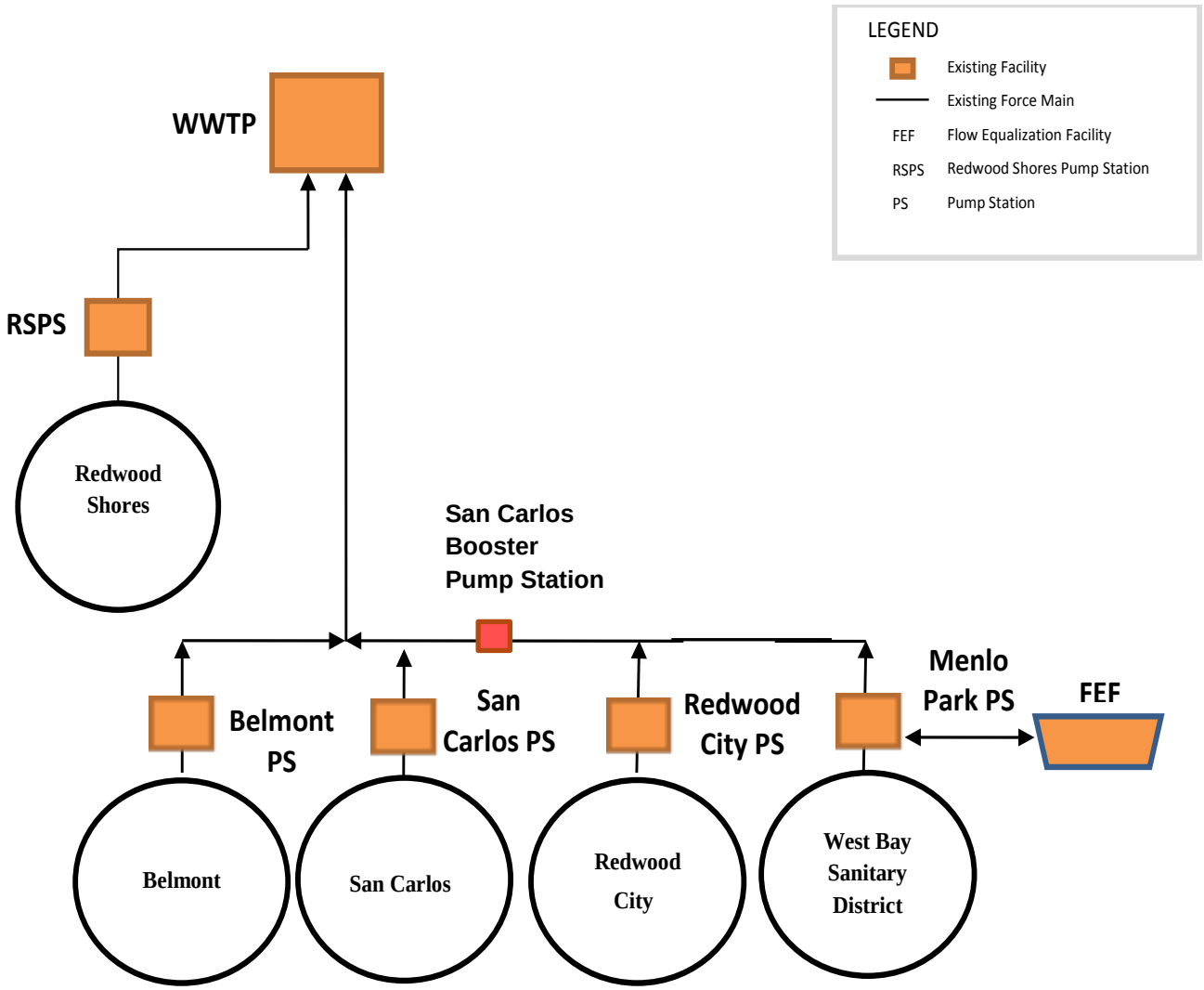

Figure 1 - Existing Conveyance System

History

To understand the need for the Wastewater Conveyance System and Treatment Reliability Improvement Project (the Project) it is useful to know the history of SVCW, the assumptions used during the original design of the conveyance system, why the various components were built, and why at different times. This description of the history of SVCW will illustrate that the conveyance system is being operated in a manner different than its original design intent and, now, beyond its useful life.

Until the mid-1960's the mid-peninsula cities had their own wastewater treatment plants. Redwood City Sanitary District owned and operated the Redwood City Sewage Treatment Facility. Belmont and San Carlos owned and operated the Belmont/San Carlos Joint Sewage Treatment Facility. The developer of Redwood Shores (Mobil Land) owned the Redwood Shores Treatment Plant and it was operated by Redwood City Sanitary District. The Redwood City and Belmont/San Carlos plants separately discharged effluent to San Francisco Bay. The Redwood Shores Plant consisted of oxidation ponds and had no discharge as all the wastewater was evaporated. The level of treatment provided by these three plants and the locations of their outfalls could not meet the new stricter wastewater treatment and disposal regulations being imposed and developed at the state (Porter-Cologne Act, 1969) and federal (Clean Water Act, 1972) levels.

The Regional Water Quality Control Board (Regional Board) ordered a 10-to-1 dilution requirement for San Francisco Bay discharges. With encouragement from the Regional Board, in June 1969, the three cities formed the Strategic Consolidation Sewerage Plan Joint Powers Authority (SCSP JPA) for the purpose of addressing the new water quality regulations on a regional basis. To meet the 10-to-1 dilution requirement as soon as possible, the SCSP JPA would build connecting pipelines and a deep-water outfall for discharging the effluent from the existing three small treatment plants in advance of constructing the regional treatment plant. The site of the regional treatment plant needed to be decided so design of the new outfall could begin. After considering several sites, the SCSP JPA selected the Redwood Shores Plant site at the mouth of Steinberger Slough for the regional plant.

The pipeline consisted of six miles of reinforced concrete pipe that connected the treatment plants to the deep-water outfall located at the mouth of Steinberger Slough1. This new conveyance system was designed as a low pressure force main. In 1969 designs were completed for the pipeline as well as for the Redwood City Pumping Plant and the San Carlos Pumping Plant. These pumping plants were built adjacent to the respective individual treatment plants. The pump stations, pipeline, and deep water outfall were put into service in 1971. The outfall, pipeline, and the Redwood City Pumping Plant (renamed Redwood City Pump Station) are still in use today.

[1] It should be noted that reinforced concrete pipe was the pipe of choice when the pipeline was designed in the early 1970's. High density polyethylene (HDPE) pipe was not available in large diameters at that time. The highly corrosive nature of the Redwood Shores saline soils made steel a poor candidate for this alignment.

Concurrent with the SCSP JPA improvement plans, Belmont's capital plans anticipated needing a new pump station and a pipeline that would connect it to the Belmont/San Carlos Joint Plant until the regional plant was operational. By the time the regional plant was operational and the Belmont/San Carlos Joint Plant closed, Belmont would also need a direct connection to the new SCSP force main. Design for a new pump station and direct connection force main on the west side of U.S. Highway 101 finished in 1973. The force main consisted of two segments. The first was from the new Belmont pump station to the point of the future connection to the 54-inch force main. This section was 1200 feet of 24-inch wrapped and cement lined steel pipe. The second segment was downstream of the future connection point and terminated at the San Carlos/Belmont Joint Plant. In this segment the pipe size was reduced to 20-inches and the material changed to asbestos cement pipe. This change in size and material was likely due to the City wanting to reduce costs for this segment that would be used for less than 10 years.

In the mid-1970's, in response to Regional Board direction, the service area for the regional plant originally envisioned by the SCSP JPA expanded to include the West Bay Sanitary District service area. In November 1975 the members of the SCSP JPA and West Bay Sanitary District (previous named Menlo Park Sanitary District) founded South Bay System Authority (SBSA, renamed in 2014 to Silicon Valley Clean Water) JPA as the successor to the Strategic Consolidation Sewerage Plan JPA.

This addition necessitated expanding the conveyance system to connect WBSD. Design of a 2.7-mile-long 33-inch diameter reinforced concrete pipe force main between the Redwood City Pump Station and the future Menlo Park Pump Station site was completed in 1976. The pipe was put into service when the regional plant became operational in 1982. The addition of WBSD to the system required that a booster pump station be added to the force main system, as the additional WBSD flows were not anticipated in the original forcemain headloss and pressure calculations.

The five segments of the existing force main, with year built, are described in Table 1.

Table 1 - Existing Force Main Location, Size and Length

Segment	Location	Pipe Inside Diameter (ID) (in)	Year Built and Material	Age of Pipeline (years)	Length (1)	
					Lineal Feet	Miles
1	Between Menlo Park Pump Station and Redwood City Pump Station	33	1977 RCP	40	14,450	2.74
2	Between Redwood City Pump Station and San Carlos Pump Station	48	1971 RCP	46	12,950	2.45
3	Between San Carlos Pump Station and Belmont "T"	54	1971 RCP	46	3,550	0.67
4	Between Belmont Pump Station and Belmont "T"	24	1974 WSCL/C (2)	43	1,150	0.22
5	Between Belmont "T" and SBSA wastewater treatment plant	54	1971 RCP	46	15,500	2.94
Total Force Main					47,600	9.0

Based on: Table 6.1 of the SVCW Conveyance System Master Plan. Winzler & Kelly. 2011.

1. *Lengths are rounded to the nearest 50 feet and tenth of a mile.*
2. *WSCL/C = Wrapped and cement-lined steel. Construction date estimated based on design drawings being completed in Feb. 1973.*

In anticipation of higher flows and the higher water surface elevation of the regional WWTP, SBSA modified existing pump stations or built new one(s). The (1971) Redwood City and the (1974) Belmont Pump Stations were enlarged. A new San Carlos Pump station replaced the 1971 San Carlos Pump Station. The Menlo Park Pump Station was a new pump station that was subsequently modified in 1990 as part of WBSD's flow equalization project. Table 2 provides a summary of dates related to the pump stations.

Table 2 - Age of Existing Pump Stations

Pump Station	Existing PS Operational	Enlarged, New or Modified	Years in Service
Menlo Park	1982	1990	35
Redwood City	1971	1982	46
San Carlos		1982 (new)	35
Belmont	1974[a]	1982	43

[a] 1974 is based on the date of the force main design drawings.

Design of SBSA's regional WWTP was completed in December 1977 and the new plant became operational in 1982. When the regional WWTP plant was put into service, the four smaller plants were decommissioned and the new and upgraded pump stations began to pump wastewater to the regional plant.

Existing Conditions

The existing SVCW conveyance system components are beyond their useful life. SVCW's 46-year-old concrete force main is in poor condition and needs to be replaced. The pipeline suffers from several problems caused by the soils in which it is installed and the sewage characteristics. Problems have compounded, resulting in a history of numerous leaks. These leaks range from minor to the occasional catastrophic failure. Leaks require repairs along streets and in backyards and sometimes within biologically sensitive environments. One section of the original force main that had the most leaks was replaced in 2015 with a fused-jointed high density polyethylene (HDPE) pipe. This was a 1.7-mile long portion of the 48-inch diameter force main from the Redwood City Pump Station to the north end of Inner Bair Island.

Much of the existing force main is buried in young bay mud soils that are poorly suited to the existing pipeline material and joint system. Young bay mud has two main problems; it is expansive and corrosive. Expansive soils are weak, unstable, have high shrink-swell potential, and settle over time. The pipeline consists of 12-foot-long reinforced concrete pipe sections that are connected to each other with single non-restrained "O-ring" joints. The young bay mud soil does not provide sufficient support

for the reinforced concrete pipe and its joints. This results in pipe movement and separation at the joints and is the cause of the majority of the leak events.

The bay mud soil is highly corrosive to buried steel and concrete that comes into direct contact with the soil. The pipe is also subjected to microbiologically influenced corrosion (MIC) from sewer gases inside the pipe. Internal and external corrosion of the concrete and reinforcing steel leads to more significant leaks. When surges in flow occur (such as during a power outage) the resulting pressure and vacuum surge conditions have broken the weakened pipeline resulting in major sewage spills. These types of leaks tend to be catastrophic with the potential of uncontrollable discharge of untreated wastewater to the environment.

The frequency of pipeline leaks is expected to increase as the pipe ages, given the current poor condition of the pipelines, continued movement of weak soils, and acceleration of the internal and external corrosion.

In addition to the problems related to the soil, the existing pipeline was designed as a low-pressure force main pipeline and not for typical force main pressures. When WBSD was added to the conveyance system and as wet weather flows have risen, flows in the force main have grown higher than the original design anticipated. When the WBSD flows were added, a booster pump station and later a flow equalization facility, were added to the system.

With Herculean efforts, SVCW maintains pressures and surges in the conveyance system to within the force main's pressure limits, though this approach comes with significant risk. SVCW must carefully manage the flow in the pipeline to minimize leaks by opening and closing valves, turning on and off pumps (including the booster and influent lift pumps), diverting flow to storage, and backing up sewage in member agency collection systems. During wet weather events, wastewater flows from the WBSD collection system are diverted to the WBSD flow equalization facilities. When flows subside, the WBSD wastewater is pumped from the flow equalization facilities through the Menlo Park Pump Station and to the treatment plant. Sometimes these pressure management efforts require using all available pumps and valves leaving limited or no backup equipment.

The reasons provided for replacing the pipelines are corroborated by industry accepted guidelines of useful life. The 46-years are well beyond a typical force main's lifespan of 25 years.

Along with the piping, all five pump stations are in varying states of condition, ranging from poor to very poor. Despite system-wide repairs and regular maintenance, the pump stations are in need of replacement to provide safe and reliable operation and to accommodate the future projected flows through the system. Each pump station is at least 35 to 46 years old, well beyond the 15-year useful life for the mechanical and electrical components, and approaching the life of the concrete structure. In most instances the condition of the equipment has degraded to the extent that the systems require extensive maintenance to ensure functionality and reliability. To keep the pump stations operational,

SVCW is spending millions of dollars to replace various pump station components, such as control systems, pumps, and valves. These components will not be used after the Project is completed.

Another major component to be constructed would be a headworks. The original SVCW wastewater treatment facility was built with no headworks, which is typically the first step in treatment. It removes rags, sand, grit, and debris that damage pumps and other process equipment. The plant's current partial screening and grit removal processes continue to allow excessive downstream grit and unscreened material that cause premature wear on equipment and result in high maintenance and repair costs. Large debris and inorganic solids such as rags that are not removed by the existing screening equipment are removed manually. Manual removal of rags is labor intensive and places plant personnel in challenging work environments. SVCW recently installed new digester mix pumps, rotary screen presses, and gravity belt thickeners. This new equipment is very susceptible to damage caused by rags and debris. Without the headworks, this new equipment will experience the same premature wear as the older equipment.

Improvements

As previously mentioned, multiple aspects of the existing conveyance system are failing and need to be replaced or rehabilitated. The CIP improvements include upgrading the existing Belmont, Redwood City and Menlo Park pump stations, decommissioning the San Carlos pump station, replacing and rehabilitating force mains, and constructing a new a new gravity pipeline to convey flows to the WWTP. New facilities are required at the WWTP to further convey and manage wastewater flow. These facilities include a receiving lift station (RLS), headworks, and a flow diversion structure. These facilities are planned to be constructed within the existing 10-acre ornamental pond in the FoP area. The water in this pond is controlled by SVCW. Figure 2 schematically depicts the planned CIP upgrades.

Civil site improvements are needed to support these new facilities. Civil improvements include the construction of paved site access and additional parking, grading and drainage including a stormwater pump station, utilities to serve each facility, paving surrounding new facilities, and storm drainage treatment facilities in an effort to meet State Water Board requirements.

Freyer& Laureta (F&L) was assigned the task of analyzing and developing a civil plan for the future developments at the SVCW plant.

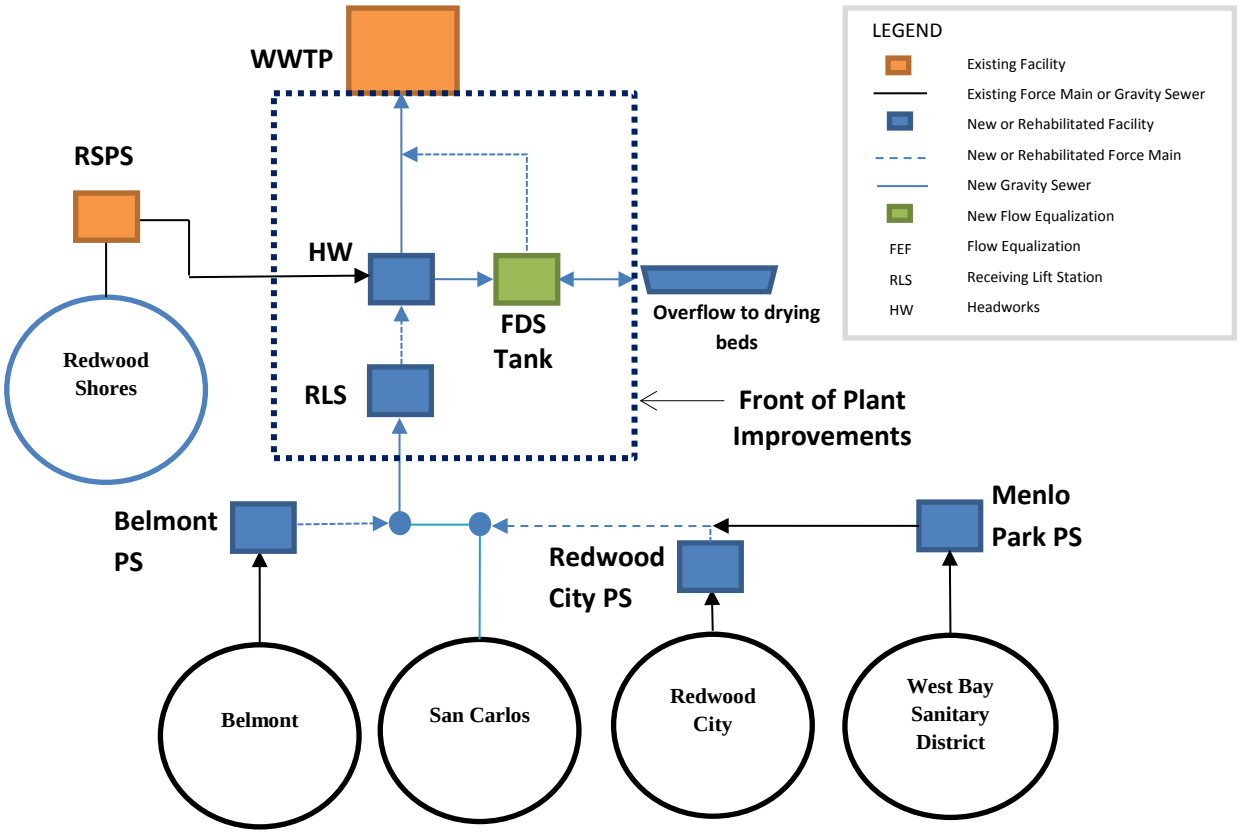

Figure 2 - Upgraded Conveyance System

Project Purpose

The purpose of this project is to prepare the FoP area for the planned CIP improvements and provide services to support and protect these improvements.

Objectives:

- Stabilize soil in the FoP area to allow construction activity.
- Provide necessary storm drainage for the FoP area.
- Improve site vehicular circulation.
- Replace parking spaces lost due to construction activity and staging in the existing parking lot.
- Relocate the main entrance to the plant to utilize improve site circulation.
- Improve lighting and security in the FoP area.
- Extend utilities to the FoP area to serve new facilities.
- Provide screening of new facilities from the public.

Expected Benefits

- Stabilized site for construction.
- Safer and improved access to the plant.
- Improved aesthetics.
- Improved storm water management.

Setting and Location

Civil sitework will occur at the SVCW WWTP FoP area located at 1400 Radio Rd in Redwood City. The majority of the civil sitework will be performed within the 10-acre ornamental pond at the front of plant. The water in this pond is recycled water and water level is controlled by SVCW. The pond will be drained to allow construction of plant improvements.

The SVCW plant is currently landlocked, surrounded by potential wetlands to the northwest, State lands/SF bay to the southeast, State lands/Steinberger Slough to the southwest, and two SVCW owned ornamental ponds to the southwest, artificially filled with recycled water by SVCW.

These ponds are approximately 10-acres and 5-acres in size.

Figure 3 - Aerial Image of the WWTP

As shown in Figure 3, Aerial Image of WWTP, the treatment plant is directly adjacent to San Francisco Bay. The site is relatively flat and protected from the Bay by an existing levee and sheet pile wall. Figure 4 shows the conveyance system upgrades.

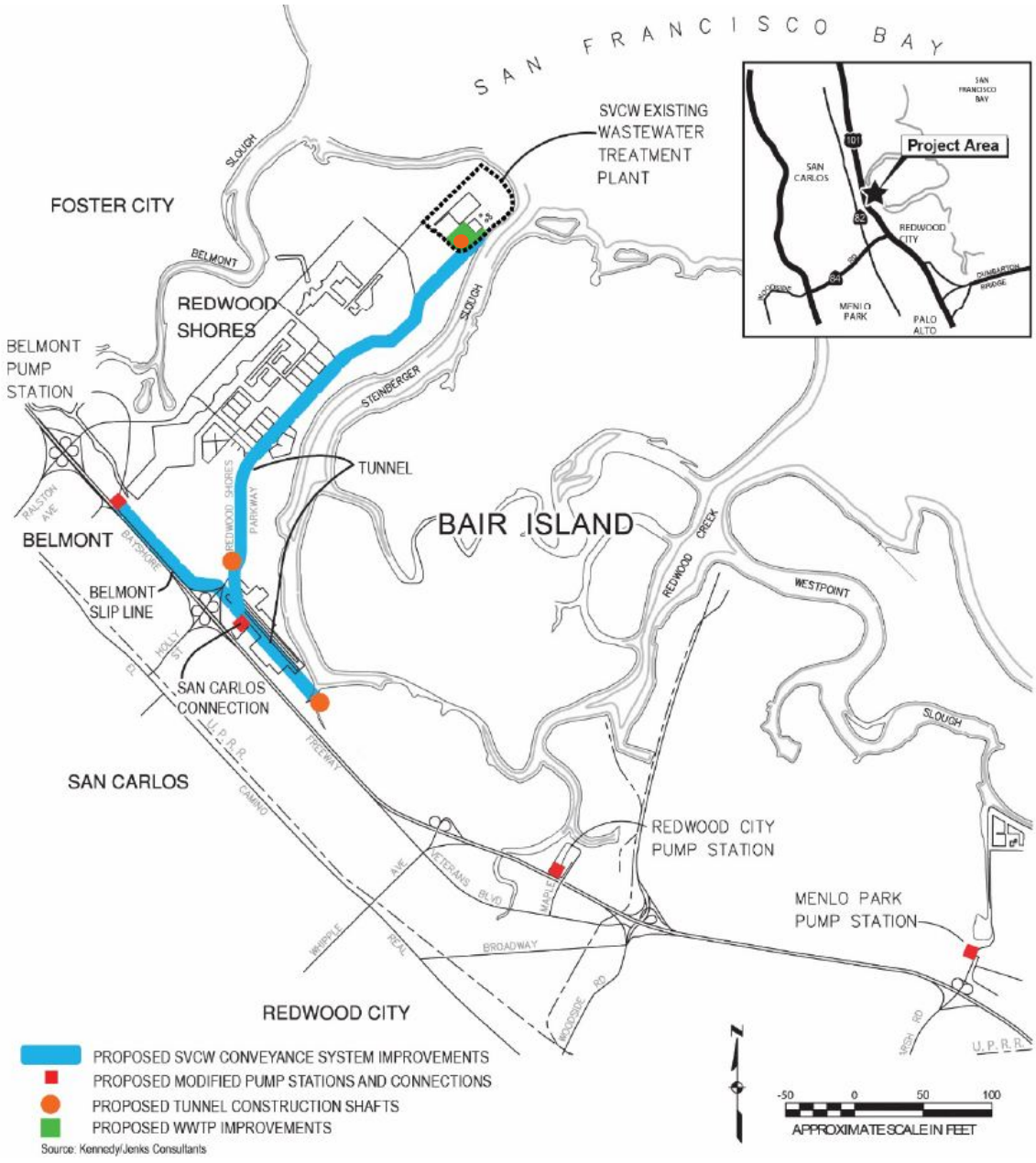

Figure 4 - Conveyance System Location Map

Summary of Field Investigations Performed

Survey

An aerial topographic survey was performed for the entire WWTP, including the FoP area. Ground surveys were performed within the pond, along the existing entrance roadway and tree line adjacent to the pond for further site planning. The aerial survey can be seen in Figure 5, Aerial Topographic Survey Map.

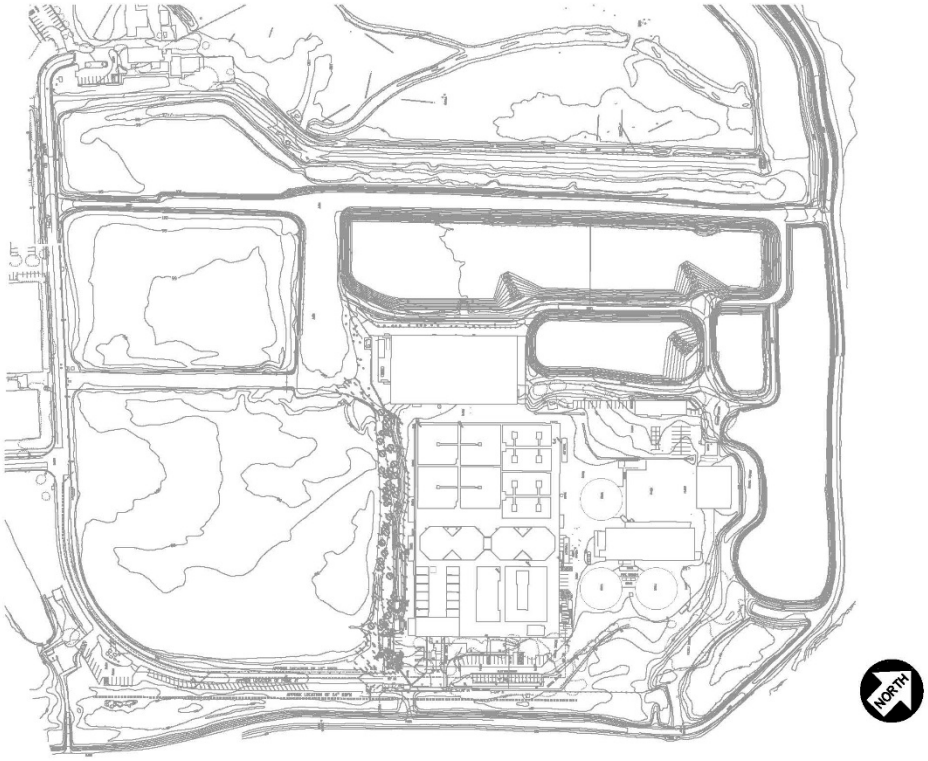

Figure 5 – Aerial Topographic Survey Map

Geotechnical

DCM Consulting (DCM) was a subconsultant to F&L with the task of determining bay mud elevations and depths and subsurface soil strengths. Twenty-Four Cone Penetration Tests (CPTs) were performed across the front of plant. This method used a steel cone, which is connected to a sleeve and rod. This rod is pushed into the soil with the friction sleeve taking measurements of resistance and pressure.

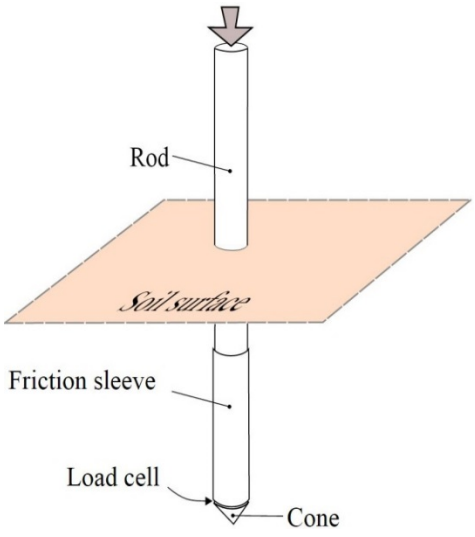

Figure 6 - CPT

Soil profile information was also collected from borings. From the borings and the CPTs, DCM created a map showing the bottom depths of the Young Bay Mud (YBM). YBM has low strength that cannot adequately support structures without the use of a pile supported foundations in the stiffer soils below the YBM. This map was used in site planning, placing facilities outside of areas of thick YBM to reduce deep foundations required for the facilities.

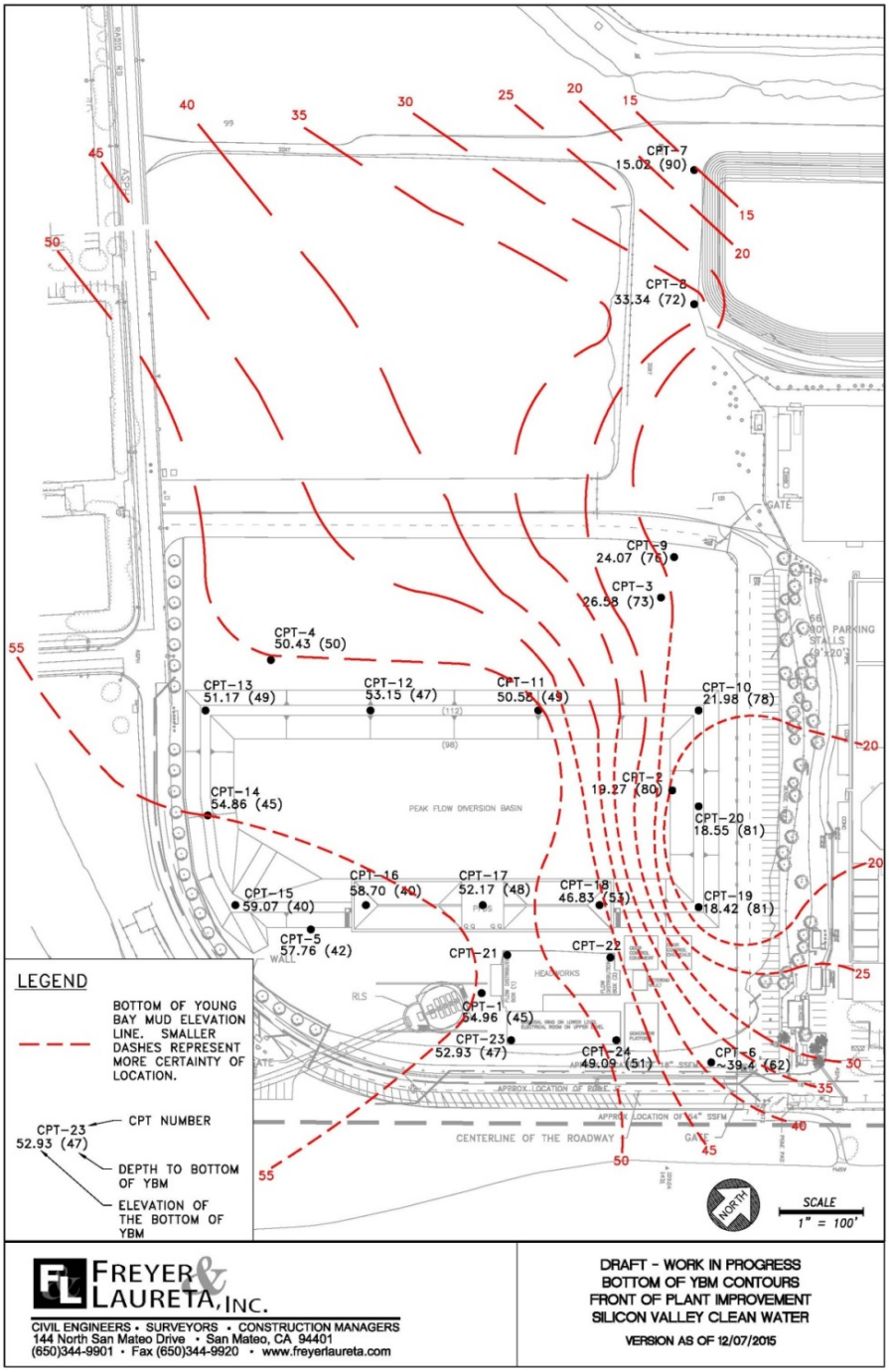

Figure 7 - Young Bay Mud Contour Map

The YBM Contour Map was created by surveying the ground elevations at CPT locations and overlaying it onto the topographic survey base map. Surface elevation contours of the bottom of YBM was interpolated using the surveyed ground elevation and depth of bay mud.

Because of these conditions DCM is recommending soil stabilization at the front of plant for the civil sitework. DCM recommends using a lime treatment in combination with geofabric in certain locations. Lime treatment has been used at SVCW in previous improvement projects. The lime treatment requires spreading and mixing lime into on-site soils. This process will be repeated until the desired consistency and moisture content are acquired. Geofabric is installed by rolling out layers of fabric and covering them with a minimum of 18 inches of soil.

Figure 8 - Past SVCW project using lime stabilization

Figure 9 - Example of using geofabric

The site will ultimately be filled to achieve desired finished grade elevations. Soil import is anticipated but the reuse of soil from onsite excavations, the receiving lift station as an example, is also an option. To reuse this soil, drying and soil conditioning would be needed. To facilitate soil conditioning, the soil can be placed on stable ground in a 12-inch-thick lifts, which will be tilled and turned until brought down to a 20-30% moisture content. The amount of time necessary for conditioning will be dependent on the prevailing weather. To accelerate the process, lime treatment could be used on the YBM. This would quicken the process and allow an 18-inch-thick lifts to be used for drying.

Soils below the YBM, that would potentially be excavated material were found to be relatively low in moisture content, and could be reused with minimal drying.

Hazardous Material

Iris Environmental (Iris) was a subconsultant to F&L to environmental sample and test the existing subsurface soils at the site. Iris took thirteen soil samples across the pond varying from 5 feet to 75 feet in depth.

Soil samples were tested for petroleum hydrocarbon, volatile organic compounds, polycyclic Aromatic Hydrocarbons, and other potentially hazardous materials. From these tests, Iris assessed the soil was non-hazardous waste. They also provided instructions on reuse and disposal. The full Soil Sampling Report can be found in the Appendix.

Corrosion

V&A Consulting Engineers (V&A) was a subconsultant to F&L to conduct tests for soil corrosivity. This was performed using the Wenner 4-pin testing method where pipe locations were preliminarily planned. From testing and sampling performed it was concluded that the soil is highly corrosive. Corrosion protection shall be necessary for concrete structures and iron/steel pipes. The Soil Corrosivity Technical Memo can be found in the Appendix.

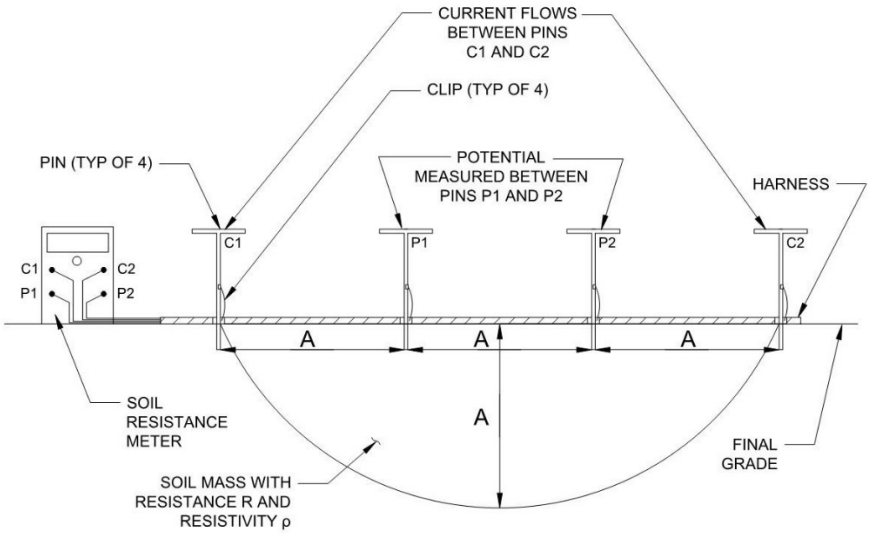

Figure 10 - Wenner 4 Pin Test

Planning and Design Parameters and Assumptions

Storm Design Flows

A 10 year 24-hour design storm was used for storm system planning. Based on the National Oceanic Atmospheric Administration (NOAA), this storm produces a depth of 3.13 inches of rainfall at the plant, generating an estimated rainfall volume of approximately 1 million gallons of stormwater over the 10 acre ornamental pond area .

Stormwater treatment is planned to be designed based on the National Pollutant Discharge Elimination System (NPDES) MS4 program.

Settlement Parameter

Utilities and pavement should be designed to account for site settlement over a 50-year period.

Fire Protection

Fire systems shall be constructed per local building and fire code requirements.

Lighting

Illumination shall match existing lighting levels at the key facilities currently in operation.

Planning assumptions

The planning assumptions for the Site Civil are as follows:

- No soils on-site are reused for site fill.
- Stormwater collected on site is treated through planters per MS4 requirements.
- Utility connections to new facilities will be determined by facility designers and provided to civil site designer.
- All surveys shall use plant monuments for horizontal and vertical control.
- A stormwater pump station will be designed and constructed in the Front of Plant area. This pump station will discharge into the 5-acre ornamental pond. Provisions are to be designed for water within the 5 acre pond to drain back to the plant for treatment.
- A 10-foot tall screening wall will be constructed along Radio Road to screen plant improvements from the public.
- The new parking lot and driveway shall be constructed prior to occupying the current parking lot for construction staging.

Hydraulic Analysis – Storm Drain

A hydraulic analysis was performed on the existing storm drain system at the WWTP using a 10-year design storm. It was determined that the existing system has no capacity to handle flows from the FoP. The FoP must drain independent of this existing system.

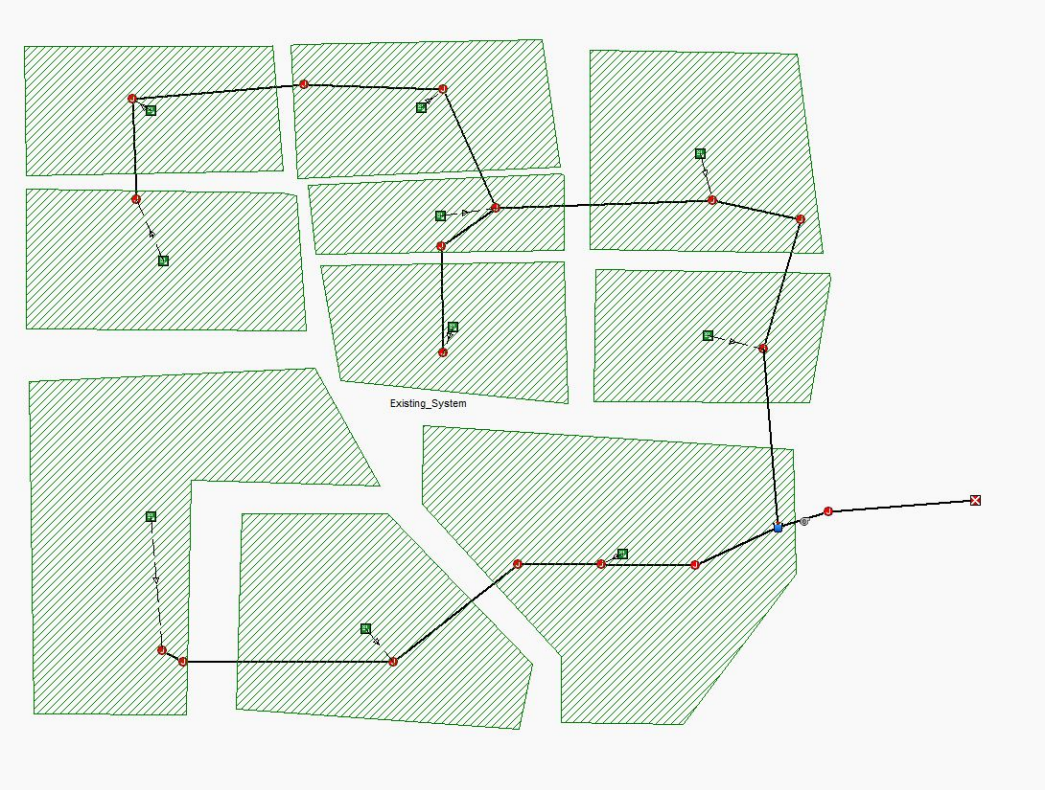

Figure 11 –Storm Drain Hydraulic Model into Existing Plant Storm Drain System

Project Specific Alternative Analysis

Several site plans were developed for the front of plant based on input from SVCW management, staff and consultants, and subsurface soil conditions. Other alternative analyses performed included:

Storm Drain Systems

Three storm drain options were considered to drain the future developed front of plant.

- The existing system was analyzed against a 10-year storm event to determine available capacity to serve the FoP. It was determined the existing system had insufficient capacity to handle FoP storm flows. In order to increase capacity to drain the FoP, the existing system would require the replacement and lowering a majority of the existing pipe network. The existing stormwater pump station would also need to be lowered and upsized to handle the additional flow. Due to disruption to plant operations, and the scope of work required, this alternative had a low ranking compared to other alternatives.

- A second option considered creating a larger FDS or separate holding tank for stormwater. Although a viable option, this option would occupy more space in the FoP area than desired, leaving less room for future plant improvements in the FoP.
- A third option analyzed was utilizing new planters for stormwater treatment, which serves environmental and aesthetic purposes. These planters would drain to a new pump station that would convey treated stormwater into the 5-acre pond keeping storm flow completely contained on site.

The third option which provided environmental and aesthetic benefits when managing stormwater was selected for the FoP.

Selected Project

Civil sitework is programmed to support the existing plant operation and allow for efficient construction of new facilities planned in the FoP area. Civil sitework will be phased to provide simultaneous site access, soil stabilization, and services to the new facilities.

Project Components

Initial planning for the site civil work anticipated improvements would be constructed in three phases, each phase set to allow for the most efficient construction of facilities within the FoP area. These phases include:

Phase 1

- Site Grading and Stabilization – In this phase, the site would be graded and soil stabilized to allow for construction and construction staging. Areas not planned to be paved will receive a geofabric lining and have fill placed on top of the lining. This will be primarily in staging areas. Areas planned to be paved will be lime stabilized first, then fill placed on top to a subgrade elevation. The following figures show the two step stabilization zones.

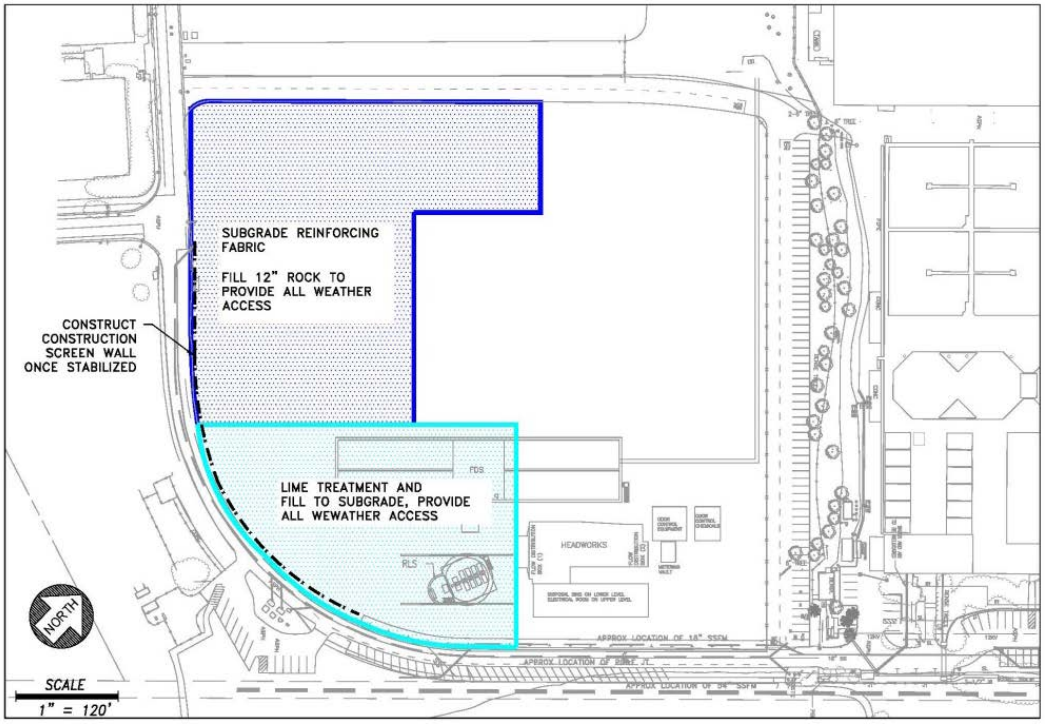

Figure 12 - First Phase of Soil Stabilization

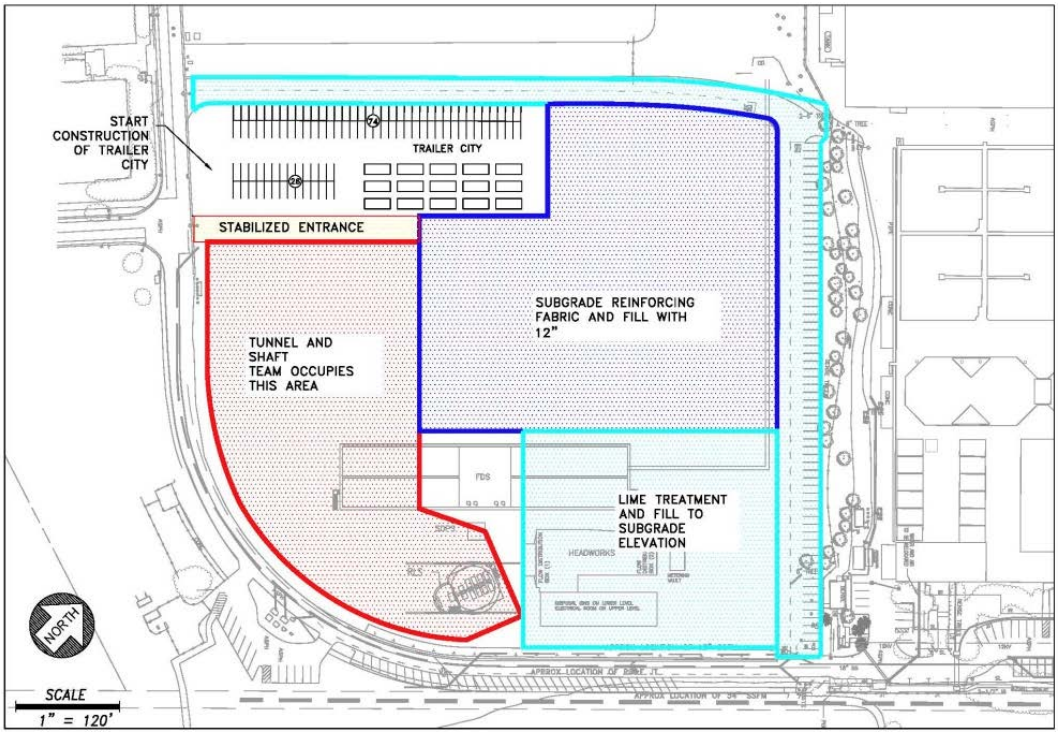

Figure 13 - Second phase of stabilization

- Interim Storm Drain – To drain the site during construction, new temporary inlets and piping will be installed to divert stormwater into the existing storm drain system. It is anticipated that

minor ponding will occur at the FoP area, but be isolated to areas outside of plant improvements.

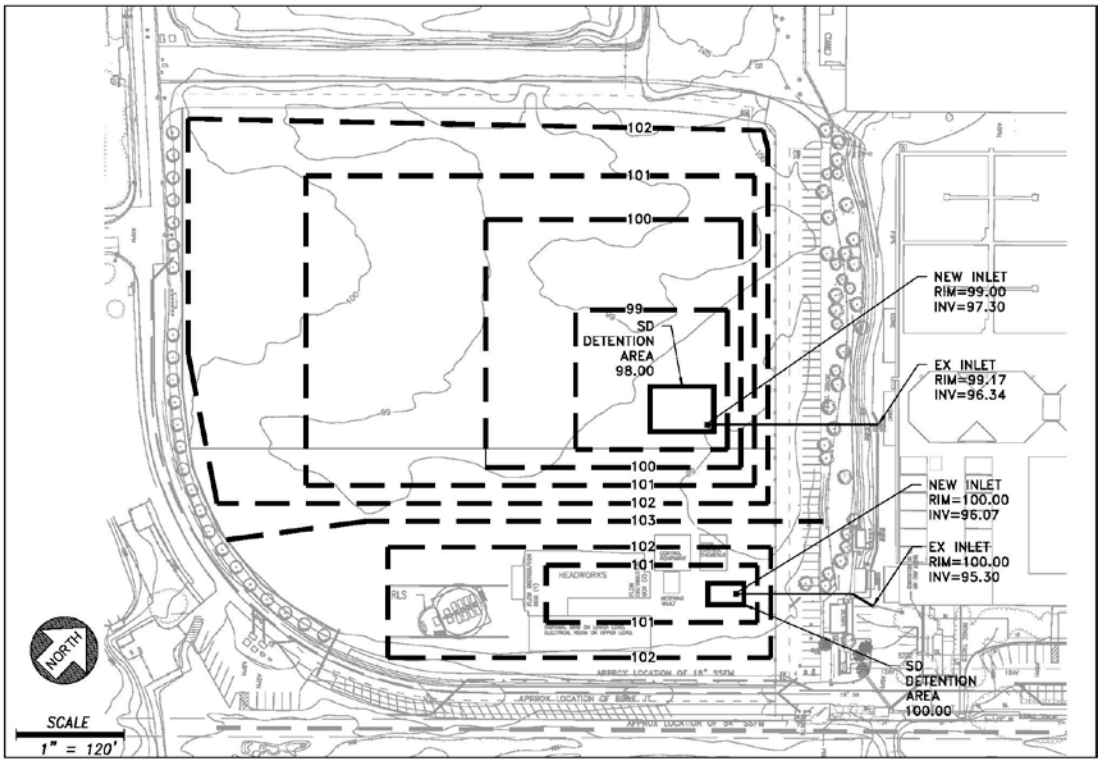

Figure 14 - Possible interim drainage plan

- Utilities and Crossings – to avoid trenching across new driveways and parking, utility corridors and piping will be established to provide room for utilities needing to serve FoP facilities.
- Lighting – New lighting will be provided for safety along the new roadways and parking.
- Preliminary paving and striping – Paving will be required on the new roadway as well as around the new facilities to allow for access of vehicles. It is anticipated that pavement will be installed in two lifts. Only one lift will be placed in Phase 1.
- Concrete work – New curbs, planters and wheel stops will be constructed to protect vehicles and pedestrians.
- Construction Fencing – To keep the site safe and organized, construction fences will be erected.

Phase 2

- Storm Drain Pump Station - A new pump station shall be installed to pump treated stormwater to the 5-acre pond.
- Storm Drain System – New inlets, piping and planters will be constructed to collect, convey, and store/treat stormwater.
- Separate Overflow Pipe – As part of the civil project, a new process overflow pipe will be constructed from the flow diversion structure to drying bed A. This will allow more storage capacity for the conveyance system in case its needed. This overflow pipe is independent of and

not associated with the site storm drain system. Existing utilities may need to be offset to install this pipe.

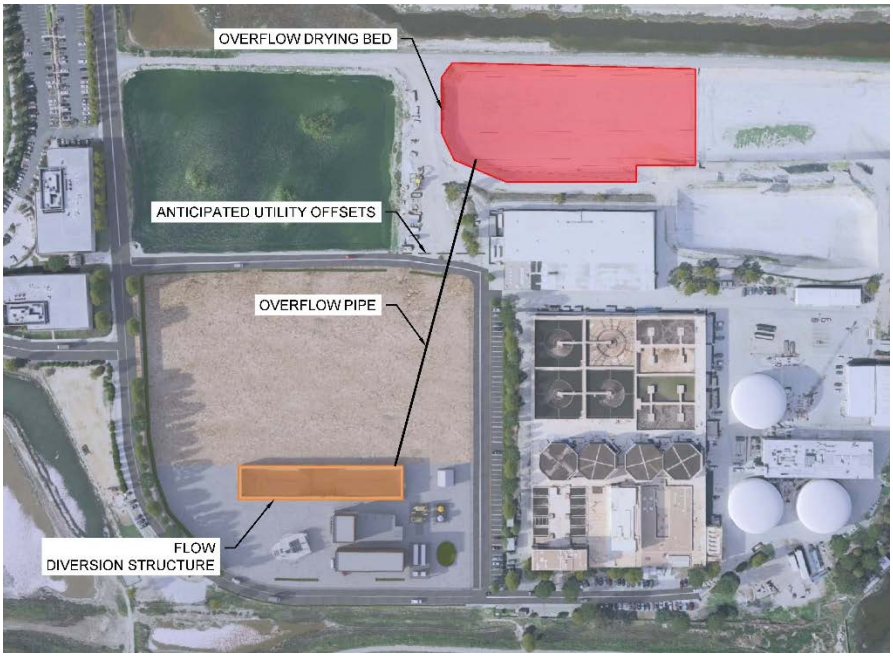

Figure 15 - Proposed overflow pipe

- Utility Connections – With coordination from other teams, utilities will be extended for connection to their respective project structures.

Phase 3

- Final Grading – After most of the construction has been completed, the final lift of AC will be installed.
- Concrete work – Rolled curbs shall be installed along the south side roadway in order to prevent traffic from straying into the structures and planters.
- Signage – New signage shall be placed to direct traffic, identify buildings, identify parking, and call out any necessary information.
- Striping – Final striping shall be placed.
- Frontage Wall – A frontage wall shall be installed along Radio Road. This will be a precast concrete wall which will appear as if it is a concrete masonry unit wall.
- Landscaping – Trees shall be planted along the outside of the frontage wall. This will add a visual improvement as well as block additional sound once fully grown.

Figure 16 - Frontage wall prior to landscaping

Figure 17 - Frontage wall with mature trees

Conceptual Plans

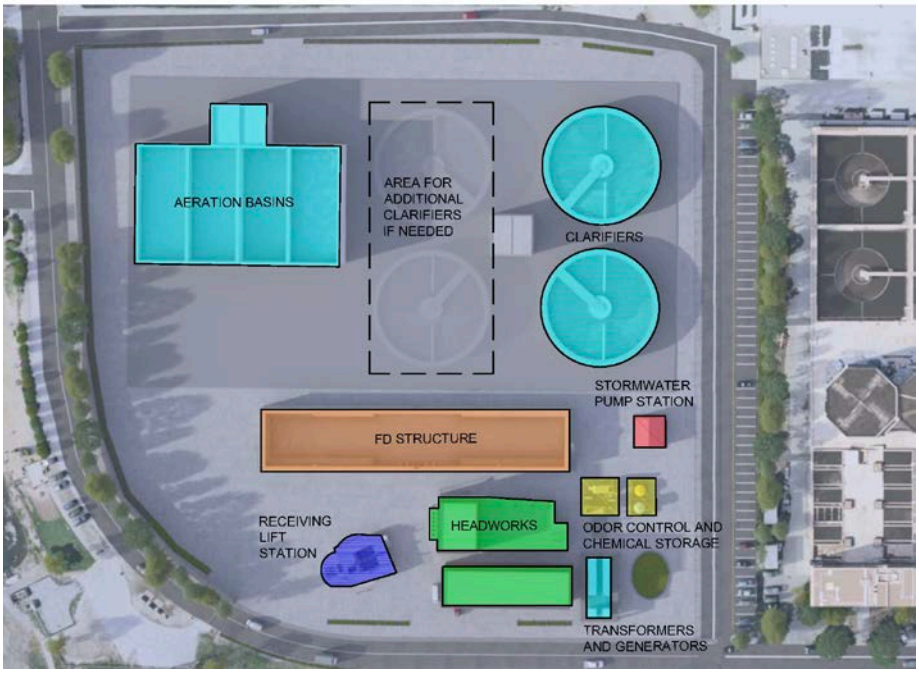

Figure 18 - Rendering of the future front of plant (including future aeration tanks and clarifiers)

Figure 19 - Rendering of the future front of plant

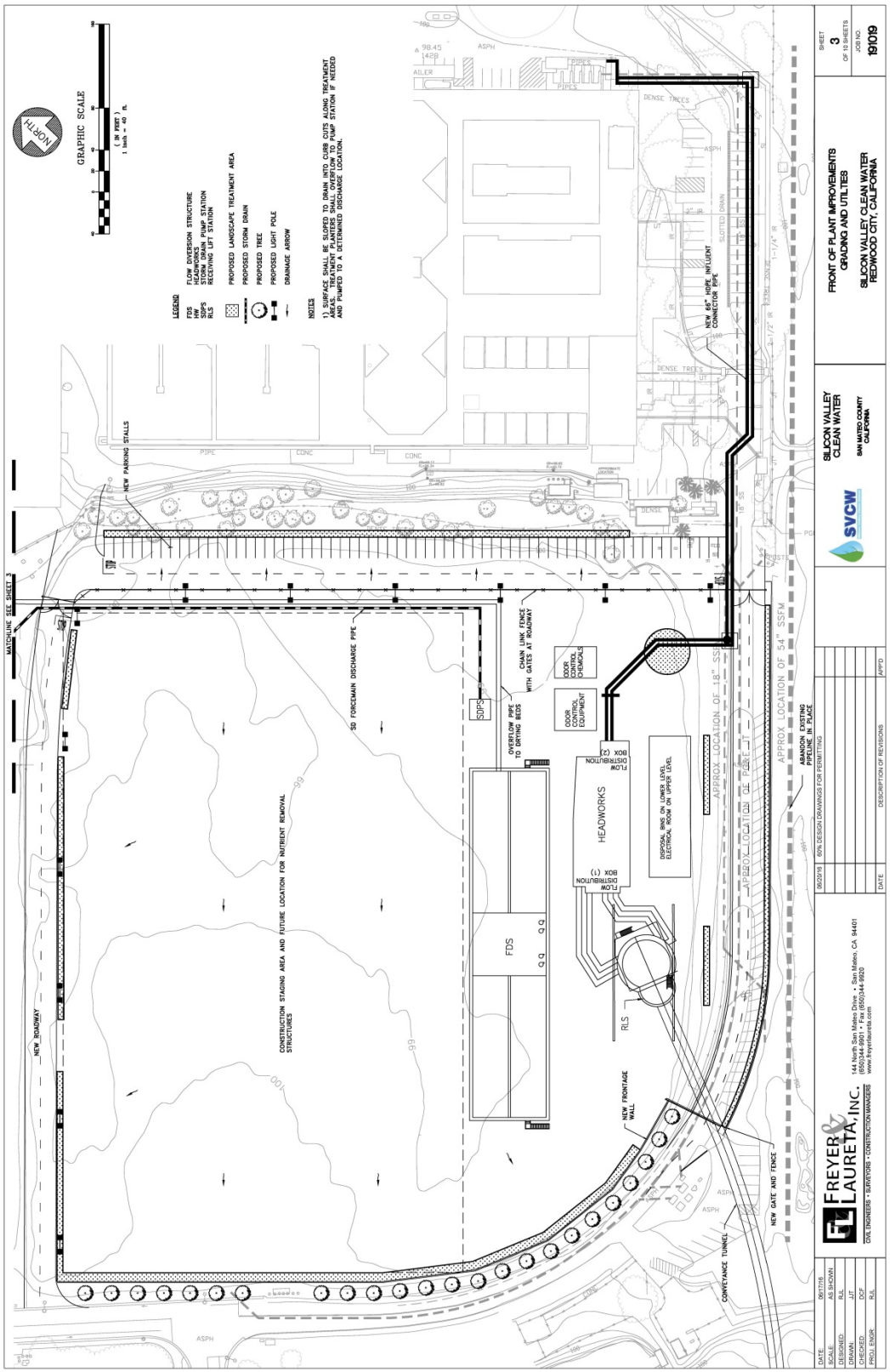

Figure 20 - Site Plan

Major Equipment

There is no major civil site related mechanical equipment within the Front of Plant area except for the stormwater pump station. There is no major civil site related electrical equipment except for site lighting.

Design Criteria

- 10 year 24-hour storm for storm drain system
- MS4 requirement for stormwater treatment
- Pavement and utility designed to handle anticipated 50-yr settlement.
- Utilitiesthat implement corrosion protection recommendations
- Design of utilities and pavements that withstand anticipated 50-year settlement.

Useful Life of the Project

The predicted life of the pavement is approximately 25 years. Storm drainage piping is expected to provide 80 years of service. Pumps within the storm drain pump station will likely need to be replaced every 10-20 years.

Site concrete is expected to have a 50-year useful life.

The screen wall is expected to have a 50-year useful life.

Site Layouts

Construction phases were determined to optimize site access and site construction efficiency. By providing a new main entrance to the WWTP, SVCW has increased options for traffic flow and operations.

Costs

Opinion of Probable Costs were developed as the site plan progressed and a project was selected. An Opinion of Probable Cost and Lifecycle Cost Analysis were prepared and can be found in the Appendix.

Key Decisions made

- Facilities within the FoP – The required facilities were chosen to be constructed at the front of plant.
- Method of stabilization – The two types of stabilization methods, lime treatment and geofabric, were chosen based on geotechnical recommendations.
- Method of grading and drainage – SVCW has decided to utilize a series of inlets and bioretention planters at low spots to collect stormwater. The planters would naturally treat the stormwater with plants and soils. When the planters reach capacity, the stormwater would be conveyed to a storm drain pump station and be pumped to the northern 5 acre pond.

Key decisions to be made

- Specific stormwater planters and inlet locations – The general drainage pattern has been planned, but the specific location and grades at each low spot have yet to be selected.
- Types of plants to be installed in the planters – The species of plants will need to be chosen to inhabit the bioretention planters.
- Location of utility crossings and connections – The specific locations on future connections and crossings will need to be further discussed.
- Reuse of soil excavated onsite – The reuse of soil is an option, but will require further development if use is desired.

Additional Design Considerations

Constructability and Construction Sequencing

As previously mentioned the civil sitework shall be constructed in phases to allow for the efficient construction of new WWTP facilities with minor conflict. Phase 1 will be performed before most projects start construction. Phase 2 will be done while other construction is also being done. Phase 3 will be performed once a majority of the work has been done and the FoP projects are nearing end.

- **Phase 1 (Constructed Summer 2017)**Site Grading and Stabilization
- Interim Storm Drain
- Provisions for utility crossings under new driveway
- Lighting
- Preliminary paving and striping
- Concrete work
- Construction fencing

Phase 2

- Storm Drain Pump Station
- Storm Drain System
- Overflow Pipe
- Utility Connections

Phase 3

- Final Grading
- Concrete work
- Signage Striping
- Frontage Wall
- Landscaping

Corrosion Protection

Civil infrastructure will implement corrosion protection recommendations

Property Acquisition
No property acquisition required.

Operational Plan
Once constructed, the landscape will need to be maintained. With the help of the landscape architect, a maintenance plan will be prepared. The storm drain system and equipment will need to be maintained. This should include scheduled cleanings of inlets and annual inspection of and preventative maintenance to the stormwater pumps.

Permits
The need to acquire permits is not anticipated.

Safety and Security
In order to keep the site secure, site fencing will be installed. Additionally, site lighting will be installed for better visibility at night.

Electrical
Electrical infrastructure installation will be coordinated with SVCW in order to power the new pump station and lighting systems.

Primary and Standby Power
All power and standby power generators will be located in the headworks building and on the generator platform. It is anticipated standby power will be available for the stormwater pump station and critical lighting locations.

Geotechnical
Additional testing and sampling may be required to finalize stabilizing recommendations.

Energy
Although there will be new lighting, it will not make a significant impact on energy usage. The largest energy consumption is the storm drain pump station, which is anticipated to consist of pumps totaling 45hp.

Project Schedule for Design and Construction

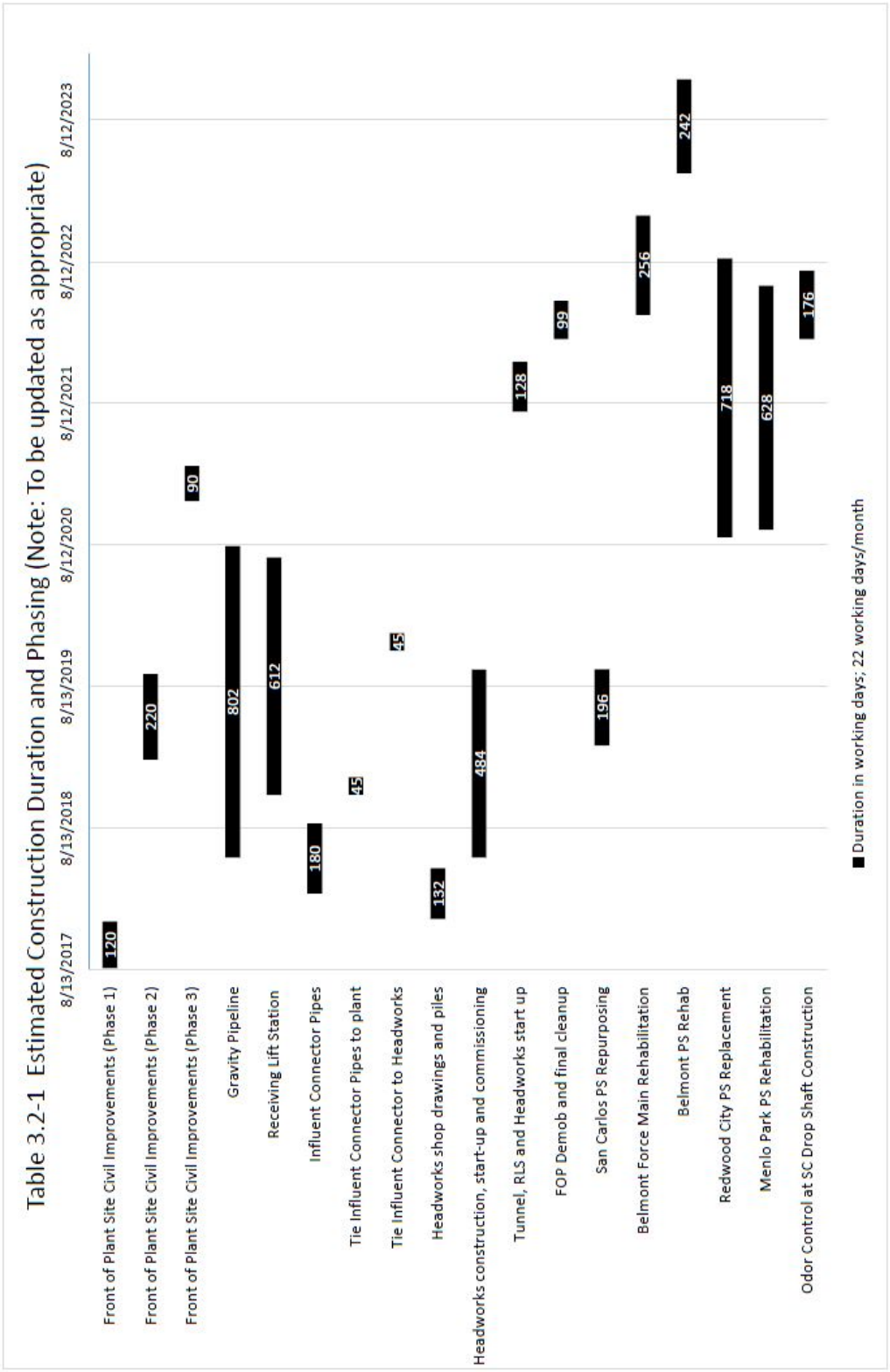

Figure 21 - Project Schedule

Outstanding Issues to Carry into Design

Issues to be Resolved

- Locate existing utilities and confirm offsets, if any
- Survey coordination with gravity pipeline team

Items for further field investigation

- Additional ground survey
- Additional soil testing needed for facility design

Project components needing alternative analysis

- None

Decisions SVCW needs to make

- Signage desired
- Final coatings and coloring for frontage wall
- Gates and fences desired
- Final wall appearance

Inter-Project coordination

- Final required staging space needs
- Utility connection points required

Appendix

Appendix A

IN-SITU SOIL INVESTIGATION REPORT

Silicon Valley Clean Water
Wastewater Treatment Plant
1400 Radio Road
Redwood City, California

January 26, 2016

Prepared for:

Freyer & Laureta
144 North San Mateo Drive
San Mateo, California 94401

Prepared by:

RPS IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612

Project No. 15-1313A

PROFESSIONAL CERTIFICATION AND LIMITATIONS

This *In-Situ Soil Investigation Report* dated January 26, 2016 for the Silicon Valley Clean Water (SVCW) Wastewater Treatment Plant at 1400 Radio Road in Redwood City, Santa Clara County, California, has been prepared under the oversight of a California Professional Geologist. This document is based on information available to RPS Iris Environmental and current laws, policies, and regulations as of the date of this document. The information and opinions expressed in this document are based upon the information available to RPS Iris Environmental and are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by RPS Iris Environmental in completing this project were consistent with normal standards of the profession. No other warranty, expressed or implied, is made.

Sincerely,

RPS IRIS ENVIRONMENTAL

Bill Chen, EIT
Scientist

Craig Pelletier, PG
Principal

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1.0 INTRODUCTION

RPS Iris Environmental prepared this *In-Situ Soil Investigation Report* (Report) for Freyer & Laureta (F&L) who are acting on behalf of Silicon Valley Clean Water (SVCW) regarding the approximate 10-acre ornamental pond located at the SVCW Wastewater Treatment Plant at 1400 Radio Road in Redwood City, San Mateo County, California (the Site). The Site location and layout with respect to the surrounding vicinity are illustrated on Figures 1 and 2. This Report is being submitted pursuant to our *Proposal for Environmental Services* (Proposal) dated September 18, 2015 (RPS Iris Environmental 2015).

1.1 Background Information

RPS Iris Environmental understands that a portion of the approximate 10-acre ornamental pond will be drained to make way for planned infrastructure improvements. Based on the information provided, improvements include the following:

- a headworks structure (HS) built at grade elevation;
- a receiving lift station (RLS) that will extend to approximately 80 feet below the ground surface (bgs);
- a peak flow diversion structure (PFDS) tank that will be placed approximately 30 feet bgs; and
- other construction-related improvements that may extend up to five feet bgs.

The tentative locations of these features within the ornamental pond are illustrated in Figure 2. Based on the size of the pond, estimated footprints of the proposed infrastructure areas, and depths of proposed work, we estimate that approximately 100,000 cubic yards (CY) of soil may be either reused or removed from the Site as part of development activities.[1]

We understand that SVCW intends to reuse potentially excavated soils on-Site. If soils do not meet applicable reuse criteria, then soils will likely be removed and transported to a suitable disposal facility. Based on this information, RPS Iris Environmental recommended evaluating the soils using a two-tiered approach.

1.2 Objectives

The objective of this investigation was to characterize the soils *in-situ* in accordance with applicable reuse (and potential disposal facility) criteria to ensure that the project can proceed as planned and to minimize scheduling delays. The information obtained from this investigation will allow F&L and SVCW to decide whether soils are suitable for reuse or if they should be removed and transported to an appropriate disposal facility.

[1] Based on these assumptions, approximately 80,000 CY may be generated from the upper 5-foot cut within the pond. The remaining volume of soil to be potentially removed represents soils below a depth of five feet bgs and within the footprint of the PFDS and RLS. We estimate up to 14,000 CY and 6,000 CY of soil may be removed below depths of 5 feet bgs in the vicinity of the PFDS and RLS, respectively.

1.3 Investigation Approach Overview

Because soils are proposed to be reused on-Site, RPS Iris Environmental designed an in-situ subsurface soil investigation in accordance with the California Department of Toxic Substances Control's (DTSC) C*lean Imported Fill Material Advisory* (Advisory). To accomplish this objective, a minimum of eight discrete soil samples are required for collection and chemical analysis of potential contaminants of concern (COPCs) for borrow areas greater than four acres in size.[2] Accounting for proportionality, a total of 20 discrete soil samples were proposed for chemical analysis within the upper five feet across the 10-acre pond. A total of ten borings were proposed to be advanced with two discrete soil samples collected from each boring (one within the upper two feet and one between three and five feet bgs) in order to accomplish this objective.

To account for potential soils removed below five feet bgs (in the vicinity of the PFDS and RLS), we recommended the collection of nine additional discrete soil samples from three additional soil borings to be advanced. Two of the borings were proposed to be advanced within the proposed footprint of the PFDS with discrete soil samples collected at approximate depths of 15 and 25 feet bgs; another one boring was proposed in the footprint of the RLS with soil samples collected every 15 feet bgs (i.e. 15, 30, 45, 60 and 75 feet).

1.4 Summarized Scope of Work

To complete the objectives above, RPS Iris Environmental completed the following:

- Conducted pre-field activities that included preparing a Site Health and Safety Plan (SHSP), determining suitable boring locations and clearing boring locations of potential underground utilities/features.
- Advanced a total of 13 soil borings[3] to collect a total of 29 discrete soil samples for chemical analysis in accordance with the Proposal.
- Instructed the analytical laboratory to analyze the soil samples for COPCs.
- Evaluated the analytical data to suitable reuse criteria.
- Prepared this Report.

2.0 PRE-FIELD ACTIVITIES

Prior to initiating field activities, RPS Iris Environmental completed the following pre-field activities:

- Arranged for Site access with appropriate personnel.
- Obtained a drilling permit (Permit) from the San Mateo County Department of Environmental Health Groundwater Protection Program (GPP). A copy of the Permit is included as Appendix A.

[2] California Environmental Protection Agency (Cal/EPA). 2001. *Information Advisory Clean Imported Fill Material.* California DTSC. October.
[3] Ten borings were advanced to 6 feet bgs; two borings to 28 feet bgs; and one boring to 76 feet bgs.

- Prepared a SHSP for the work proposed at the Site in accordance with the requirements of the State of California General Industry Safety Order (GISO) 5192 and Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120). A copy of the SHSP was kept onsite during field activities. The SHSP detailed the work to be performed, safety precautions, emergency response procedures, nearest hospital information, and onsite personnel responsible for managing emergency situations.
- Contacted Underground Service Alert (USA) at least 48 hours prior to drilling, as required by law. On October 28, 2015, USA Ticket No. 540277 was issued for the Site.
- Contracted and met with Subdynamic Locating Services, Inc. (Subdynamic), a private utility locating service based in San Jose, California, to clear the proposed work area of potential underground utilities. On October 28, 2015, Subdynamic cleared proposed boring locations relative to the presence and/or marked locations of subsurface utilities/features.

3.0 FIELD ACTIVITIES

The following sections discuss the field activities that were performed to complete the objectives for this investigation.

3.1 Sampling Approach

On November 3, 2016, RPS Iris Environmental supervised the completion of borings IE-01 through IE-13 at the Site using a hand auger and a truck-mounted direct-push drilling rig operated by Environmental Control Associates (ECA), a California C-57 licensed drilling firm, located in Aptos, California. RPS Iris Environmental staff professionals under direct supervision by an RPS Iris Environmental Professional Geologist performed the field activities.

A total of 29 soil samples collected from 13 soil borings were collected for chemical analysis in accordance with the Proposal. As noted in the footnote below, the borings were advanced to depths between 6 and 76 feet below the ground surface (bgs). The approximate locations of the borings are presented in Figure 3 and are summarized as follows:

- Ten (10) borings (IE-01 to IE-10) advanced in a grid across the Site to six (6) feet bgs;
- Two (2) borings (IE-11 and IE-12) advanced in the vicinity of the PFDS to twenty-eight (25) feet bgs;
- One (1) boring (IE-13) advanced in the vicinity of the RLS to seventy-six (76) feet bgs.

Exact locations of the proposed borings and sampling depths were based on the results of our pre-field activities, accessibility and encountered drilling conditions. Table 1 presents a summary of the soil samples collected and analyzed for each boring location.

3.2 Soil Logging

Soil cores were collected from boreholes for soil logging purposes using an approximate 4-foot long core barrel sampler that contained an acetate liner to retain a relatively undisturbed soil

core. Soil cores were examined for soil classification and described on boring logs in general conformance with the Unified Soil Classification System. Soil boring logs are presented in Appendix B.

Field screening of soil cores was performed using a photoionization detector (PID) to evaluate the potential presence of volatile organic compounds (VOCs). To initiate this procedure, soil samples were removed from plastic liners, placed into glass jars sealed with foil. After sufficient time had elapsed for vapor build-up inside the jars, each jar was measured by inserting the probe tip of the PID through the foil to allow measurement of ionizable substances in the jar headspace. Measurements of the headspace were obtained in the parts per million (ppm) range for total VOCs. The results of the headspace tests were recorded on boring logs (Appendix B).

3.3 Soil Sampling Methodology

Table 1 presents a summary of the depths of the discrete soil samples from each boring that were collected, both held and analyzed, as part of this investigation.

Discrete soil samples selected for laboratory chemical analysis were cut from recovered acetate liners, covered with Teflon tape and plastic end caps, labeled and placed into a chilled cooler for transport to the analytical laboratory. Soil samples for potential volatile analysis were collected in accordance with United States Environmental Protection Agency (USEPA) Method 5035 to minimize potential volatile loss. Additional deeper samples were collected and held at the analytical laboratory for future potential analysis pending the results of the initial samples that were analyzed.

The collected samples were labeled with identifying information and stored in a pre-chilled ice chest awaiting transportation to the laboratory. Selected soil samples for chemical analysis were recorded onto a chain-of-custody document and accompanied the soil sample shipments to Curtis and Tompkins Laboratories, Inc. (C&T), a California-certified analytical laboratory located in Berkeley, California.

3.4 Backfilling Activities

Upon collection of the soil samples, the borings were backfilled and sealed using neat cement grout in accordance with the Permit. Borings greater than 20 feet deep were grouted using tremmie pipe. Representatives of GPP were notified in advance of grouting activities.

3.5 Decontamination and Waste Generation

ECA placed new plastic liners in the core barrel prior to each sampling interval. Drilling equipment and down-hole sampling equipment was washed in a solution of non-phosphate detergent, double-rinsed with potable water prior to each use, and allowed to dry.

Soil cuttings were placed into one 55-gallon drum that was sealed and labeled for temporary on-Site storage pending receipt of the analytical results.

4.0 LABORATORY ANALYSES

As summarized in Table 1, a total of 29 discrete soil samples were initially submitted to C&T for chemical analysis by one or more of the following USEPA (or equivalent) Methods:

- Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g) by Method 8260B,
- TPH quantified as diesel (TPH-d) and motor oil (TPH-m) ranges by Method 8015B using a silica gel cleanup (SGC) preparation method,
- VOCs by Method 8260B,
- Polycyclic Aromatic Hydrocarbons (PAHs) by Method 8270 using Selective Ion Mode (SIM),
- Polychlorinated Biphenyls (PCBs) by Method 8082,
- Organochlorine Pesticides (OCPs) by Method 8081A,
- California Assessment Manual (CAM) 17 Total Metals by Methods 6010B and 7471A,
- Asbestos prepared and analyzed by CARB 435,
- pH by 9045D,
- Moisture Content by the Contract Laboratory Procedure
- Waste Extraction Test (WET) individual analytes – as necessary
- Toxicity Characteristic Leaching Procedure (TCLP) individual analytes by Method 1313 – as necessary

WET and/or TCLP chromium was analyzed on the samples after the initial total metal analyses if they indicated a potential exceedance of hazardous waste characterization screening guidelines (in the event soils need to be disposed off-Site). The total concentration of metals in soil will be compared to 10 times the Soluble Threshold Limit Concentration (10×STLC) and 20 times the TCLP (20×TCLP) hazardous waste limits, respectively. If a calculated value exceeds the 10×STLC or 20×TCLP screening limit, RPS Iris Environmental authorized the analytical laboratory to run either a WET and/or TCLP analysis on that particular composite sample.

The soil samples were analyzed on a standard five business-day turn-around time (TAT).

5.0 FINDINGS

The following sections present the findings of this investigation.

5.1 Soil Boring Observations

Boring logs are presented in Appendix B.

Based on the encountered lithology during this investigation, shallow soils within the first five feet bgs generally consist of clay or sandy clay. A low plasticity clay layer extends down to 44.5 feet bgs. A high plasticity clay layer continues from 44.5 to 62 feet bgs. A heaving sand zone with silt was encountered from approximately 62 to 76 feet bgs.

RPS Iris Environmental did not observe obvious evidence of contaminated soil (*e.g.*, discoloration, petroleum odors, elevated PID results) in the soil borings advanced for this investigation. PID results, which ranged between 0.0 and 0.3 ppm, are noted in the boring logs in Appendix B.

Groundwater was encountered in each of the boring advanced at depths between 2.5 and 5.3 feet bgs.

Refusal conditions were not encountered during drilling activities.

5.2 Analytical Results

A summary of the analytical program of the discrete soil samples that were analyzed as part of this investigation is presented in Table 1. Tabular summaries of the analytical data are provided on Tables 2 and 3. Soil analytical data were compared to the following screening level criteria, where established:

- San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Tier 1 Residential and Commercial, and Construction/Trench Worker Scenario Environmental Screening Levels (ESLs), Tables A-1 and A-2[4], and K-3[5] (Cal/EPA 2013);
- Federal Resource Conservation Recovery Act (RCRA) and State of California Code of Regulations (CCR) Title 22 hazardous waste characterization limits.

Certified laboratory analytical reports and chain-of-custody information are included in Appendix C. The analytical data are further discussed in the following sub-sections.

5.2.1 TPH in Soil

The following is a summary of the total petroleum hydrocarbon (TPH) concentrations detected in the analyzed soil samples. Data are presented in Table 2.

- TPH-g was not detected in the analyzed soil samples and the reporting limits are below applicable ESLs. Hazardous waste criteria have not been established for TPH-g.
- TPH-d was detected in four of the analyzed soil samples at concentrations ranging between 1.7 milligrams per kilogram (mg/kg) and 3.6 mg/kg. The detected concentrations of TPH-d and the reporting limits in the remaining analyzed samples are below applicable ESLs. Hazardous waste criteria have not been established for TPH-d.
- TPH-mo was detected in five of the analyzed soil samples at concentrations ranging between 9.0 mg/kg and 13 mg/kg. The detected concentrations of TPH-mo and the reporting limits in the remaining analyzed samples are below applicable ESLs. Hazardous waste criteria have not been established for TPH-mo.

[4] Tables A-1 and A-2 represent shallow soil for residential and commercial scenarios, respectively, where groundwater is a current or potential drinking water resource (Cal/EPA 2013). The Tier-1 ESLs are protective of: direct exposures (i.e., human health), leaching to groundwater and subsequent degradation of the groundwater resource, terrestrial biota, and nuisance (e.g., odor) concerns.

[5] Table K-3 represents direct exposure for construction/trench worker exposure scenario (Cal/EPA 2013). The construction/trench worker ESLs are protective of: direct exposures (i.e., human health).

5.2.2 VOCs in Soil

As summarized in Table 2, VOCs were either not detected in the analyzed soil samples submitted for chemical analysis with the exception of acetone and 2-butanone (methyl ethyl ketone [MEK]) in each of the analyzed samples.[6] Only the concentration of acetone at IE-01-02.0 exceeded the conservative Tier 1 Residential and Commercial ESL established at 0.5 mg/kg, which is based on ecotoxicity criteria. The more applicable direct contact ESL of 240,000 mg/kg for acetone was not exceeded. The reporting limits in each of the remaining analyzed samples were below applicable ESLs and hazardous waste criteria and, where established.

5.2.3 PAHs in Soil

As shown in Table 2, concentrations of PAHs were not detected in the soil samples and are below applicable ESLs. There are no hazardous waste criteria established for PAHs.

5.2.4 PCBs in Soil

PCBs were not detected in the analyzed soil samples. The reporting limits for PCBs are below applicable ESLs and applicable hazardous waste criteria. These data are presented in Table 2.

5.2.5 Total Metals in Soil

As shown in Table 2, concentrations of total metals were not detected above their respective ESLs with the exception of total arsenic. Arsenic was detected in each of the analyzed soil samples at concentrations between 3.4 mg/kg and 12 mg/kg, exceeding the Tier 1 ESLs in each sample, and the Construction/Trench Worker ESL in two samples. The detected concentrations of arsenic are within the range of regional estimates of ambient (background) arsenic concentrations developed for the San Francisco Bay Area, with an upper estimate (99th percentile) of 11 mg/kg and a maximum detected concentration of 21 mg/kg (Duvergé 2011).

The Total Threshold Limit Concentrations (TTLCs) of metals in soils were not detected at levels that would classify the soils as either California or Federal hazardous waste.

5.2.6 Soluble and Leachable Metals in Soil

To further evaluate whether soils potentially removed from the Site could be classified either as California or Federal RCRA hazardous waste from a landfill disposal standpoint, additional evaluation is required to determine if constituents have the ability to dissolve or leach at concentrations that may exceed established California or Federal RCRA hazardous waste criteria. To do so, the total metal analytical results are initially compared or screened to the 10×STLC and 20×TCLP concentrations for each individual analyte in an effort to evaluate their theoretical solubility or leaching potential. The 10×STLC and 20×TCLP concentrations are used because the extraction liquids added to the sample to determine the solubility and leachability potential result in extracts equal to 10 times and 20 times the weight of the original sample being tested, respectively.

[6] Acetone and MEK are common laboratory artifacts.

As shown in Table 2, each of the 29 soil samples had detected concentrations of total chromium that exceeded 10×STLC and 10 of the soil samples exceeded the 20×TCLP concentration suggesting that those samples should be tested by either California Waste Extraction Test (WET) method or the TCLP.[7] RPS Iris Environmental instructed the analytical laboratory to analyze the samples with concentrations of reportable total chromium that exceeded either the STLC or TCLP screening level for their potential for hazardous waste if removed from the Site.

Table 3 presents the results of WET and TCLP testing that was performed on the available soil samples. Based on the solubility and leachability test results, the soils would not be classified as either California or Federal RCRA hazardous waste if they require disposal.

5.2.7 OCPs in Soil

Table 2 presents the results of the OCP testing performed on the analyzed soil samples. OCPs were not detected in the analyzed soil samples submitted for chemical analysis and the reporting limits are below Tier 1 ESLs and applicable hazardous waste criteria.

5.2.8 Asbestos in Soil

As summarized in Table 2, asbestos was not detected in the analyzed soil samples. The reporting limits for asbestos are below the hazardous waste concentration of one percent.

5.3 Quality Assurance/Quality Control

The analytical laboratory data was reviewed by RPS Iris Environmental to establish its validity and to ensure the laboratory data was complete and accurate. RPS Iris Environmental verified that holding times for each analytical method were achieved and that the laboratory achieved the specific data quality objectives for each selected analytical method. A review of the data validation process indicates that the laboratories completed QA/QC activities required for the samples such as blanks, lab control samples, matrix spikes, and duplicates. Minor QA/QC issues, which are common for these analyses, are noted in the laboratory reports presented in Appendix B. The QA/QC parameters for the samples were generally within acceptable limits. Based on the information above, the analytical data collected as part of this investigation are usable for their intended purpose.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information contained in this Report, RPS Iris Environmental concludes the following:

- The Site is underlain by native clay material (San Francisco Bay Mud) to a depth of 62.0 feet bgs where a sand zone begins.

[7] Due to the number of analytical tests performed on the soil samples, there was not enough sample volume to perform either WET or TCLP analyses on the following soil samples: IE-03-02.0, IE-07-02.0, IE-09-01.0, IE-11-15.0, IE-12-15.0.

- Groundwater is shallow beneath the Site and the direction of groundwater flow could not be definitively determined during this limited subsurface investigation.
- The analytical results of the discrete soil analytical samples indicate that the soils appear suitable for on-Site or off-Site residential or commercial reuse.
- There do not appear to have been adverse on-Site releases to subsurface soil beneath the Site.
- The soils are considered a California non-hazardous waste if the soils require disposal to a landfill facility.

RPS Iris Environmental recommends the following:

1. Remove the soils temporarily staged in the 55-gallon drum at the Site.
2. The results of this investigation should be provided to GPP as required by the drilling permit. This submittal package should include the following: a figure showing the locations of the borings, copies of the analytical data, boring logs, and documentation that the generated wastes were removed from the Site.
3. If soils are planned to be reused and transported off-Site, a complete copy of this Report should be provided for consideration and acceptance.
4. If soils are planned to be removed from the Site and taken to a disposal facility, a complete copy of this Report should be provided to the applicable disposal facility for consideration and acceptance.

7.0 REFERENCES

Cal/EPA. 2001. *Information Advisory Clean Imported Fill Material.* Department of Toxic Substances Control. October.

Cal/EPA. 2013. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*. San Francisco Bay Regional Water Quality Control Board. December.

Duvergé, D.J. 2011. *Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region*. A thesis submitted to the faculty of San Francisco State University, In partial fulfillment of The Requirements for The Degree, Master of Science in Geosciences. December.

RPS Iris Environmental. 2015. *Proposal for Environmental Services.* September 18.

TABLES

Table 1. Summary of Soil Borings, Sample Depths and Analytical Program

Location	Sample ID	Depth	Laboratory Analyses										
			TPH	VOC	PAH	PCB	OCP	Metals	Asbestos	pH	Moisture	WET Cr	TCLP Cr
IE-01	IE-01-02.0	2.0	X	X	X	X	X	X	X	X	X	X	X
	IE-01-04.0	4.0	X	X	X	X	X	X	X	X	X	X	–
IE-02	IE-02-02.0	2.0	X	X	X	X	X	X	X	X	X	X	–
	IE-02-04.0	4.0	X	X	X	X	X	X	X	X	X	X	X
IE-03	IE-03-02.0	2.0	X	X	X	X	X	X	X	X	X	I	–
	IE-03-04.0	4.0	X	X	X	X	X	X	X	X	X	X	–
IE-04	IE-04-02.0	2.0	X	X	X	X	X	X	X	X	X	X	X
	IE-04-04.0	4.0	X	X	X	X	X	X	X	X	X	X	X
IE-05	IE-05-02.0	2.0	X	X	X	X	X	X	X	X	X	X	X
	IE-05-04.0	4.0	X	X	X	X	X	X	X	X	X	X	X
IE-06	IE-06-02.0	2.0	X	X	X	X	X	X	X	X	X	X	X
	IE-06-04.0	4.0	X	X	X	X	X	X	X	X	X	X	–
IE-07	IE-07-02.0	2.0	X	X	X	X	X	X	X	X	X	X	I
	IE-07-04.0	4.0	X	X	X	X	X	X	X	X	X	X	X
IE-08	IE-08-02.0	2.0	X	X	X	X	X	X	X	X	X	X	–
	IE-08-04.0	4.0	X	X	X	X	X	X	X	X	X	X	–
IE-09	IE-09-01.0	1.0	X	X	X	X	X	X	X	X	X	I	–
	IE-09-04.5	4.5	X	X	X	X	X	X	X	X	X	X	–
IE-10	IE-10-02.0	2.0	X	X	X	X	X	X	X	X	X	X	X
	IE-10-04.0	4.0	X	X	X	X	X	X	X	X	X	X	–
IE-11	IE-11-15.0	15.0	X	X	X	X	X	X	X	X	X	I	–
	IE-11-25.0	25.0	X	X	X	X	X	X	X	X	X	X	–
IE-12	IE-12-15.0	15.0	X	X	X	X	X	X	X	X	X	I	–

Table 1. Summary of Soil Borings, Sample Depths and Analytical Program

Location	Sample ID	Depth	Laboratory Analyses										
			TPH	VOC	PAH	PCB	OCP	Metals	Asbestos	pH	Moisture	WET Cr	TCLP Cr
	IE-12-25.0	25.0	X	X	X	X	X	X	X	X	X	X	–
IE-13	IE-13-15.0	15.0	X	X	X	X	X	X	X	X	X	X	–
	IE-13-30.0	30.0	X	X	X	X	X	X	X	X	X	X	–
	IE-13-45.0	45.0	X	X	X	X	X	X	X	X	X	X	–
	IE-13-60.0	60.0	X	X	X	X	X	X	X	X	X	X	–
	IE-13-75.0	75.0	X	X	X	X	X	X	X	X	X	X	–

Notes:

(1) "ID" indicates identification.

(2) Depths are indicated in feet below ground surface (ft bgs).

(3) "TPH" indicates total petroleum hydrocarbons in the gasoline range analyzed by USEPA Method 8260B, and the diesel and motor oil range analyzed by USEPA Method 8015B with silica gel cleanup.

(4) "VOC" indicates volatile organic compounds, analyzed by USEPA Method 8260B.

(5) "PAH" indicates polycyclic aromatic hydrocarbons, analyzed by USEPA Method 8270SIM.

(6) "PCB" indicates polychlorinated bisphenyls, analyzed by USEPA Method 8082.

(7) "OCP" indicates organochlorine pesticides, analyzed by USEPA Method 8081A.

(8) "Metals" indicates Title 22 metals, analyzed by USEPA Methods 6010B and 7471A.

(9) Asbestos was analyzed by CARB Method 435.

(10) pH was analyzed by ASTM 9045D

(11) Moisture was analyzed by the USEPA Contract Laboratory Procedure.

(12) "WET Cr" indicates total chromium analyzed by California Waste Extraction Test.

(13) "TCLP Cr" indicates total chromium analyzed by Toxicity Characterisitc Leaching Procedure.

(14) "X" indicates a sample collected and analyzed for the indicated analyte.

(14) "I" indicates a sample collected and insufficient sample remained for extraction.

Table 1. Summary of Soil Borings, Sample Depths and Analytical Program

Location	Sample ID	Depth	Laboratory Analyses										
			TPH	VOC	PAH	PCB	OCP	Metals	Asbestos	pH	Moisture	WET Cr	TCLP Cr

(15) "–" indicates a sample collected and not analyzed for indicated analyte.

(16) "USEPA" indicates the United States Environmental Protection Agency.

(17) "CARB" indicates the California Air Resources Board.

(18) "ASTM" indicates the ASTM International.

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-01-02.0	IE-01-04.0	IE-02-02.0	IE-02-04.0	IE-03-02.0	IE-03-04.0	IE-04-02.0	IE-04-04.0	IE-05-02.0	IE-05-04.0
Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015B & 8260B																
TPH-g	100	500	2,700	None	None	None	<0.26	<0.31	<0.34	<0.35	<0.32	<0.38	<0.55	<0.54	<0.40	<0.46
TPH-d	100	110	900	None	None	None	3.6 Y	<1.3	1.7 Y	1.7 Y	<1.6	<1.8	<1.8	<1.7	<1.7	<1.6
TPH-mo	100	500	28,000	None	None	None	9.3 Y	<6.5	<7.4	13 Y	<8.2	<9.1	<9.0	<8.5	<8.6	<8.1
Volatile Organic Compounds (VOCs) by USEPA Method 8260B																
Acetone	0.50	0.50	240,000	None	None	None	***0.66 J***	0.13	0.14	0.12	<1.5	0.13	0.14	0.22	0.093	0.092
Benzene	0.044	0.044	71	None	None	10	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Bromobenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Bromodichloromethane	0.48	1.5	48	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Bromoform	1.7	1.7	2,000	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Bromomethane (methyl bromide)	0.28	0.28	36	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
2-Butanone (methyl ethyl ketone)	4.5	4.5	130,000	None	None	4,000	0.029	0.017	0.013 J	0.028	0.049	0.015 J	0.020 J	0.046	0.019	0.019
n-Butylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
sec-Butylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
tert-Butylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Carbon disulfide	None	None	None	None	None	None	0.0016 J	<0.0071	<0.0072	0.0025 J	<0.0076	0.0026 J	0.0045 J	0.0026 J	0.0013 J	0.0011 J
Carbon tetrachloride	0.11	0.11	14	None	None	10	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Chlorobenzene	1.5	1.5	5,000	None	None	2,000	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Chlorobromomethane (bromochloromethane)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Chlorodibromomethane (dibromochloromethane)	6.6	6.6	260	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Chloroethane (ethyl chloride)	1.1	1.1	170,000	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
Chloroform	1.1	2.4	130	None	None	120	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Chloromethane (methyl chloride)	20	20	430	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
2-Chlorotoluene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
4-Chlorotoluene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Cumene (isopropylbenzene)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Cymene (p-isopropyltoluene)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2-Dibromo-3-chloropropane	0.0045	0.0045	None	10 (*)	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2-Dibromoethane (ethylene dibromide)	0.00033	0.00033	5.2	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Dibromomethane (methylene bromide)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2-Dichlorobenzene	1.1	1.1	8,700	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,3-Dichlorobenzene	7.4	7.4	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-01-02.0	IE-01-04.0	IE-02-02.0	IE-02-04.0	IE-03-02.0	IE-03-04.0	IE-04-02.0	IE-04-04.0	IE-05-02.0	IE-05-04.0
1,4-Dichlorobenzene	0.59	0.59	330	None	None	150	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Dichlorodifluoromethane (Freon 12)	None	None	None	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
1,1-Dichloroethane (1,1-DCA)	0.20	0.20	410	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2-Dichloroethane (1,2-DCA)	0.0045	0.0045	40	None	None	10	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1-Dichloroethene (1,1-DCE)	1.0	1.0	1,100	None	None	14	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
cis-1,2-Dichloroethene (cis-1,2-DCE)	0.19	0.19	77	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
trans-1,2-Dichloroethene (trans-1,2-DCE)	0.67	0.67	550	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Dichloromethane (methylene chloride)	0.077	0.077	790	None	None	None	<0.029	<0.028	<0.029	<0.044	0.0061 J	0.0071 J	0.025 J	0.024 J	<0.035	<0.034
1,2-Dichloropropane	0.12	0.12	62	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,3-Dichloropropane	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
2,2-Dichloropropane	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1-Dichloropropene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
cis-1,3-Dichloropropene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
trans-1,3-Dichloropropene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Ethylbenzene	3.3	3.3	490	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Hexachlorobutadiene	4.3	4.3	280	None	None	10	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
2-Hexanone (methyl butyl ketone)	None	None	None	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
Methyl tert-butyl ether (MTBE)	0.023	0.023	3,800	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
4-Methyl-2-pentanone (methyl isobutyl ketone)	2.8	2.8	150,000	None	None	None	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
Naphthalene	1.2	1.2	370	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
n-Propylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Styrene	1.5	1.5	28,000	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1,1,2-Tetrachloroethane	0.0091	0.0091	330	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1,2,2-Tetrachloroethane	0.018	0.018	38	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Tetrachloroethene (PCE)	0.55	0.70	31	None	None	14	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Toluene	2.9	2.9	4,300	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	0.0032 J	<0.010	0.016	8.9E-04 J	<0.0088	<0.0084
1,2,3-Trichlorobenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2,4-Trichlorobenzene	1.5	1.5	600	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1,1-Trichloroethane (1,1,1-TCA)	7.8	7.8	44,000	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1,2-Trichloroethane (1,1,2-TCA)	0.070	0.070	87	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Trichloroethene (TCE)	0.46	0.46	24	2,040	2,040	10	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Trichlorofluoromethane (Freon 11)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-01-02.0	IE-01-04.0	IE-02-02.0	IE-02-04.0	IE-03-02.0	IE-03-04.0	IE-04-02.0	IE-04-04.0	IE-05-02.0	IE-05-04.0
1,2,3-Trichloropropane	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,2,4-Trimethylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
1,3,5-Trimethylbenzene	None	None	None	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Vinyl acetate	None	None	None	None	None	None	<0.072	<0.071	<0.072	<0.11	<0.076	<0.10	<0.14	<0.12	<0.088	<0.084
Vinyl chloride	0.032	0.085	3.8	10 (*)	None	4	<0.014	<0.014	<0.014	<0.022	<0.015	<0.021	<0.027	<0.025	<0.018	<0.017
m-, p-Xylene	2.3	2.3	2,500	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
o-Xylene	2.3	2.3	2,500	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Polycyclic Aromatic Hydrocarbons by USEPA 8270 Selective Ion Mode																
Acenaphthene	16	16	8,600	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Acenaphthylene	13	13	None	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Anthracene	2.8	2.8	43,000	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Benz(a)anthracene	0.38	1.3	8.3	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Benzo(a)pyrene	0.038	0.13	0.83	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Benzo(b)fluoranthene	0.38	1.3	8.3	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Benzo(g,h,i)perylene	27	27	None	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Benzo(k)fluoranthene	0.38	1.3	8.3	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Chrysene	3.8	13	83	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Dibenz(a,h)anthracene	0.11	0.38	2.4	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Fluoranthene	40	40	5,700	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Fluorene	8.9	8.9	5,700	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Indeno(1,2,3-c,d)pyrene	0.38	1.3	8.3	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Naphthalene	1.2	1.2	370	None	None	None	<0.0072	<0.0071	<0.0072	<0.011	<0.0076	<0.010	<0.014	<0.012	<0.0088	<0.0084
Phenanthrene	11	11	None	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Pyrene	85	85	8,600	None	None	None	<0.022	<0.0066	<0.037	<0.0079	<0.0081	<0.0091	<0.0090	<0.017	<0.084	<0.0082
Polychlorinated Biphenyls (PCBs) by USEPA Method 8082																
Aroclor-1016	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016
Aroclor-1221	0.22	0.74	2.7	50	50	None	<0.028	<0.025	<0.029	<0.030	<0.031	<0.035	<0.034	<0.032	<0.032	<0.031
Aroclor-1232	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016
Aroclor-1242	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016
Aroclor-1248	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016
Aroclor-1254	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-01-02.0	IE-01-04.0	IE-02-02.0	IE-02-04.0	IE-03-02.0	IE-03-04.0	IE-04-02.0	IE-04-04.0	IE-05-02.0	IE-05-04.0
Aroclor-1260	0.22	0.74	2.7	50	50	None	<0.014	<0.013	<0.014	<0.015	<0.016	<0.017	<0.017	<0.016	<0.016	<0.016
Organochlorine Pesticides (OCPs) by USEPA Method 8081A																
Aldrin	0.032	0.13	0.87	1.4	1.4	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
alpha-Chlordane (cis-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
gamma-Chlordane (trans-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
4,4'-DDD	2.4	10	70	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
4,4'-DDE	1.7	4.0	50	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
4,4'-DDT	1.7	4.0	50	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
DDD, DDE, DDT [5]	None	None	None	1.0	1	None	2.9E-05	1.3E-04	2.9E-05	1.5E-05	1.6E-05	3.6E-05	1.8E-05	8.4E-05	1.7E-05	1.6E-05
Dieldrin	0.0023	0.0023	0.93	8.0	8	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
Endosulfan I	None	None	None	None	None	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
Endosulfan II	None	None	None	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
Endosulfan sulfate	None	None	None	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
Endrin	0.00065	0.00065	64	0.2	0.2	0.4	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
Endrin aldehyde	None	None	None	None	None	None	<0.0095	<0.043	<0.0098	<0.0051	<0.0054	<0.012	<0.0059	<0.028	<0.0055	<0.0054
Heptachlor	0.013	0.013	3.6	4.7	4.7	0.16	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
Heptachlor epoxide	0.014	0.014	1.6	None	None	0.16	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
alpha-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
beta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0049	<0.022	0.034 C	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
delta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
gamma-Hexachlorocyclohexane (lindane)	0.0098	0.0098	64	4.0	4	8	<0.0049	<0.022	<0.0051	<0.0027	<0.0028	<0.0062	<0.0030	<0.014	<0.0028	<0.0028
Methoxychlor	19	19	1,100	100	100	200	<0.049	<0.22	<0.051	<0.027	<0.028	<0.062	<0.030	<0.14	<0.028	<0.028
Toxaphene	0.00042	0.00042	12	5	5	10	<0.17	<0.79	<0.18	<0.094	<0.098	<0.22	<0.11	<0.51	<0.10	<0.098
CAM17 Metals by USEPA Method 6010B/7471A																
Antimony	20	40	120	500	150	None	3.0	2.1	2.2	3.1	2.2	1.9	2.1	3.7	3.2	2.7
Arsenic	0.39	1.6	10	500	50	100	***6.7***	***4.5***	***7.6***	***7.0***	*12*	***4.2***	***3.2***	***6.8***	***6.6***	***6.4***
Barium	750	1,500	61,000	10,000	1,000	2,000	45	34	48	83	73	41	61	110	58	51
Beryllium	4.0	8.0	180	75	7.5	None	0.46	0.50	0.61	0.71	0.64	0.52	0.51	0.64	0.50	0.48
Cadmium	12	12	110	100	10	20	1.0	0.99	1.1	1.3	0.90	0.91	1.0	1.6	1.2	1.2
Chromium, total	1,000	2,500	None	2,500	50	100	100	69	94	110	89	89	110	360	110	100
Cobalt	23	80	49	8,000	800	None	8.6	12	8.6	11	6.9	9.4	9.8	13	9.7	8.9
Copper	230	230	12,000	2,500	250	None	27	23	27	35	43	29	26	59	29	27

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-01-02.0	IE-01-04.0	IE-02-02.0	IE-02-04.0	IE-03-02.0	IE-03-04.0	IE-04-02.0	IE-04-04.0	IE-05-02.0	IE-05-04.0
Lead	80	320	320	1,000	50	100	4.9	5.8	6.1	19	21	3.0	15	38	12	9.0
Mercury	6.7	10	27	20	2	4	0.16	0.16	0.069	0.13	0.10	0.047	0.093	0.075	0.051	0.043
Molybdenum	40	40	1,500	3,500	3,500	None	2.8	0.77	1.8	2.8	14	0.99	2.5	9.0	3.0	2.0
Nickel	150	150	6,100	2,000	200	None	64	61	59	71	51	63	68	84	65	60
Selenium	10	10	1,500	100	10	20	<0.72	<0.66	<0.79	<0.84	<0.84	<0.90	<0.84	<0.79	<0.77	<0.75
Silver	20	40	1,500	500	50	100	<0.36	<0.33	<0.39	<0.42	<0.42	<0.45	<0.42	<0.40	<0.39	<0.37
Thallium	0.78	10	3.1	700	70	None	<0.72	<0.66	<0.79	<0.84	<0.84	<0.90	<0.84	<0.79	<0.77	<0.75
Vanadium	200	200	1,500	2,400	240	None	94	53	73	84	84	70	77	80	89	84
Zinc	600	600	93,000	5,000	2,500	None	69	52	73	110	77	64	90	240	86	77
Asbestos by California Air Resources Control Board Method 435																
Asbestos	None	None	None	1.0	None	None	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Soil pH by ASTM International Method 9045D																
pH	None	None	None	None	None	None	6.1	7.4	7.3	7.1	6.5	7.1	7.2	7.1	7.1	6.6

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-06-02.0	IE-06-04.0	IE-07-02.0	IE-07-04.0	IE-08-02.0	IE-08-04.0	IE-09-01.0	IE-09-04.5	IE-10-02.0	IE-10-04.0
Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015B & 8260B																
TPH-g	100	500	2,700	None	None	None	<0.51	<0.31	<0.42	<0.32	<0.37	<0.48	<0.31	<0.44	<0.36	<0.15
TPH-d	100	110	900	None	None	None	1.9 Y	<1.6	<1.8	<1.7	<1.8	<1.8	<1.7	<2.0	<1.6	<1.5
TPH-mo	100	500	28,000	None	None	None	9.6 Y	<8.2	<8.8	<8.7	<9.1	<9.2	<8.7	<9.8	<8.0	9.6 Y
Volatile Organic Compounds (VOCs) by USEPA Method 8260B																
Acetone	0.50	0.50	240,000	None	None	None	0.0047 J	0.23	0.12	0.11	0.15	0.14	0.10	0.15	0.094	0.076
Benzene	0.044	0.044	71	None	None	10	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Bromobenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Bromodichloromethane	0.48	1.5	48	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Bromoform	1.7	1.7	2,000	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Bromomethane (methyl bromide)	0.28	0.28	36	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
2-Butanone (methyl ethyl ketone)	4.5	4.5	130,000	None	None	4,000	<0.013	0.023	0.026	0.018	0.011 J	0.014 J	0.016	0.023	0.0074 J	0.016
n-Butylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
sec-Butylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
tert-Butylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Carbon disulfide	None	None	None	None	None	None	0.0012 J	<0.0080	0.0014 J	<0.0089	<0.0098	0.0031 J	<0.0075	0.0026 J	0.012	8.8E-04 J
Carbon tetrachloride	0.11	0.11	14	None	None	10	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Chlorobenzene	1.5	1.5	5,000	None	None	2,000	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Chlorobromomethane (bromochloromethane)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Chlorodibromomethane (dibromochloromethane)	6.6	6.6	260	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Chloroethane (ethyl chloride)	1.1	1.1	170,000	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
Chloroform	1.1	2.4	130	None	None	120	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Chloromethane (methyl chloride)	20	20	430	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
2-Chlorotoluene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
4-Chlorotoluene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Cumene (isopropylbenzene)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Cymene (p-isopropyltoluene)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2-Dibromo-3-chloropropane	0.0045	0.0045	None	10 (*)	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2-Dibromoethane (ethylene dibromide)	0.00033	0.00033	5.2	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Dibromomethane (methylene bromide)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2-Dichlorobenzene	1.1	1.1	8,700	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,3-Dichlorobenzene	7.4	7.4	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-06-02.0	IE-06-04.0	IE-07-02.0	IE-07-04.0	IE-08-02.0	IE-08-04.0	IE-09-01.0	IE-09-04.5	IE-10-02.0	IE-10-04.0
1,4-Dichlorobenzene	0.59	0.59	330	None	None	150	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Dichlorodifluoromethane (Freon 12)	None	None	None	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
1,1-Dichloroethane (1,1-DCA)	0.20	0.20	410	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2-Dichloroethane (1,2-DCA)	0.0045	0.0045	40	None	None	10	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1-Dichloroethene (1,1-DCE)	1.0	1.0	1,100	None	None	14	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
cis-1,2-Dichloroethene (cis-1,2-DCE)	0.19	0.19	77	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
trans-1,2-Dichloroethene (trans-1,2-DCE)	0.67	0.67	550	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Dichloromethane (methylene chloride)	0.077	0.077	790	None	None	None	<0.026	<0.032	<0.038	<0.036	0.0082 J	0.010 J	<0.030	<0.028	<0.032	<0.016
1,2-Dichloropropane	0.12	0.12	62	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,3-Dichloropropane	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
2,2-Dichloropropane	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1-Dichloropropene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
cis-1,3-Dichloropropene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
trans-1,3-Dichloropropene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Ethylbenzene	3.3	3.3	490	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Hexachlorobutadiene	4.3	4.3	280	None	None	10	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
2-Hexanone (methyl butyl ketone)	None	None	None	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
Methyl tert-butyl ether (MTBE)	0.023	0.023	3,800	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
4-Methyl-2-pentanone (methyl isobutyl ketone)	2.8	2.8	150,000	None	None	None	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
Naphthalene	1.2	1.2	370	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
n-Propylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Styrene	1.5	1.5	28,000	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1,1,2-Tetrachloroethane	0.0091	0.0091	330	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1,2,2-Tetrachloroethane	0.018	0.018	38	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Tetrachloroethene (PCE)	0.55	0.70	31	None	None	14	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Toluene	2.9	2.9	4,300	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	0.0071 J	<0.0075	<0.0071	<0.0079	<0.0040
1,2,3-Trichlorobenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2,4-Trichlorobenzene	1.5	1.5	600	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1,1-Trichloroethane (1,1,1-TCA)	7.8	7.8	44,000	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1,2-Trichloroethane (1,1,2-TCA)	0.070	0.070	87	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Trichloroethene (TCE)	0.46	0.46	24	2,040	2,040	10	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Trichlorofluoromethane (Freon 11)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-06-02.0	IE-06-04.0	IE-07-02.0	IE-07-04.0	IE-08-02.0	IE-08-04.0	IE-09-01.0	IE-09-04.5	IE-10-02.0	IE-10-04.0
1,2,3-Trichloropropane	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,2,4-Trimethylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
1,3,5-Trimethylbenzene	None	None	None	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Vinyl acetate	None	None	None	None	None	None	<0.065	<0.080	<0.094	<0.089	<0.098	<0.097	<0.075	<0.071	<0.079	<0.040
Vinyl chloride	0.032	0.085	3.8	10 (*)	None	4	<0.013	<0.016	<0.019	<0.018	<0.020	<0.019	<0.015	<0.014	<0.016	<0.0080
m-, p-Xylene	2.3	2.3	2,500	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
o-Xylene	2.3	2.3	2,500	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Polycyclic Aromatic Hydrocarbons by USEPA 8270 Selective Ion Mode																
Acenaphthene	16	16	8,600	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Acenaphthylene	13	13	None	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Anthracene	2.8	2.8	43,000	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Benz(a)anthracene	0.38	1.3	8.3	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Benzo(a)pyrene	0.038	0.13	0.83	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Benzo(b)fluoranthene	0.38	1.3	8.3	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Benzo(g,h,i)perylene	27	27	None	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Benzo(k)fluoranthene	0.38	1.3	8.3	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Chrysene	3.8	13	83	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Dibenz(a,h)anthracene	0.11	0.38	2.4	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Fluoranthene	40	40	5,700	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Fluorene	8.9	8.9	5,700	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Indeno(1,2,3-c,d)pyrene	0.38	1.3	8.3	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Naphthalene	1.2	1.2	370	None	None	None	<0.0065	<0.0080	<0.0094	<0.0089	<0.0098	<0.0097	<0.0075	<0.0071	<0.0079	<0.0040
Phenanthrene	11	11	None	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Pyrene	85	85	8,600	None	None	None	<0.0074	<0.0082	<0.0088	<0.043	<0.0090	<0.0094	<0.0087	<0.030	<0.0082	<0.0075
Polychlorinated Biphenyls (PCBs) by USEPA Method 8082																
Aroclor-1016	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014
Aroclor-1221	0.22	0.74	2.7	50	50	None	<0.029	<0.031	<0.033	<0.033	<0.035	<0.035	<0.033	<0.038	<0.031	<0.029
Aroclor-1232	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014
Aroclor-1242	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014
Aroclor-1248	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014
Aroclor-1254	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-06-02.0	IE-06-04.0	IE-07-02.0	IE-07-04.0	IE-08-02.0	IE-08-04.0	IE-09-01.0	IE-09-04.5	IE-10-02.0	IE-10-04.0
Aroclor-1260	0.22	0.74	2.7	50	50	None	<0.014	<0.016	<0.017	<0.017	<0.017	<0.018	<0.017	<0.019	<0.015	<0.014
Organochlorine Pesticides (OCPs) by USEPA Method 8081A																
Aldrin	0.032	0.13	0.87	1.4	1.4	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
alpha-Chlordane (cis-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
gamma-Chlordane (trans-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
4,4'-DDD	2.4	10	70	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
4,4'-DDE	1.7	4.0	50	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
4,4'-DDT	1.7	4.0	50	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
DDD, DDE, DDT (5)	None	None	None	1.0	1	None	7.2E-05	1.6E-05	1.7E-05	1.7E-05	3.6E-05	3.6E-05	1.7E-05	5.7E-05	1.6E-05	1.5E-05
Dieldrin	0.0023	0.0023	0.93	8.0	8	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
Endosulfan I	None	None	None	None	None	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
Endosulfan II	None	None	None	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
Endosulfan sulfate	None	None	None	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
Endrin	0.00065	0.00065	64	0.2	0.2	0.4	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
Endrin aldehyde	None	None	None	None	None	None	<0.024	<0.0053	<0.0058	<0.0057	<0.012	<0.012	<0.0057	<0.019	<0.0053	<0.0049
Heptachlor	0.013	0.013	3.6	4.7	4.7	0.16	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
Heptachlor epoxide	0.014	0.014	1.6	None	None	0.16	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
alpha-Hexachlorocyclohexane	None	None	None	None	None	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
beta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	0.0035	<0.0025
delta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
gamma-Hexachlorocyclohexane (lindane)	0.0098	0.0098	64	4.0	4	8	<0.013	<0.0027	<0.0030	<0.0029	<0.0061	<0.0063	<0.0030	<0.010	<0.0027	<0.0025
Methoxychlor	19	19	1,100	100	100	200	<0.13	<0.027	<0.030	<0.029	<0.061	<0.063	<0.030	<0.10	<0.027	<0.025
Toxaphene	0.00042	0.00042	12	5	5	10	<0.45	<0.097	<0.10	<0.10	<0.22	<0.22	<0.10	<0.35	<0.097	<0.089
CAM17 Metals by USEPA Method 6010B/7471A																
Antimony	20	40	120	500	150	None	3.3	2.0	2.8	3.1	2.2	1.6	1.5	3.0	2.4	3.7
Arsenic	0.39	1.6	10	500	50	100	***11***	***6.9***	***8.0***	***6.8***	***3.5***	***4.4***	***7.1***	***3.5***	***5.3***	***4.9***
Barium	750	1,500	61,000	10,000	1,000	2,000	44	51	53	83	44	50	26	39	51	40
Beryllium	4.0	8.0	180	75	7.5	None	0.42	0.65	0.50	0.57	0.52	0.57	0.39	0.61	0.48	0.41
Cadmium	12	12	110	100	10	20	1.1	1.2	1.3	1.2	1.1	1.2	1.3	1.4	1.1	1.0
Chromium, total	1,000	2,500	None	2,500	50	100	100	99	110	110	99	97	84	83	110	92
Cobalt	23	80	49	8,000	800	None	10	14	9.7	12	8.4	9.2	8.5	15	8.7	7.5
Copper	230	230	12,000	2,500	250	None	29	35	26	40	21	20	44	24	32	21

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results									
Analyte	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-06-02.0	IE-06-04.0	IE-07-02.0	IE-07-04.0	IE-08-02.0	IE-08-04.0	IE-09-01.0	IE-09-04.5	IE-10-02.0	IE-10-04.0
Lead	80	320	320	1,000	50	100	5.3	8.1	9.3	25	4.5	3.7	2.7	7.5	8.5	4.0
Mercury	6.7	10	27	20	2	4	0.12	0.037	0.032	0.038	0.049	0.047	0.050	0.053	0.035	0.041
Molybdenum	40	40	1,500	3,500	3,500	None	2.3	1.7	2.4	3.5	1.2	1.0	7.8	<0.46	2.5	1.7
Nickel	150	150	6,100	2,000	200	None	68	73	64	72	63	65	51	86	60	55
Selenium	10	10	1,500	100	10	20	<0.71	<0.82	<0.80	<0.96	<0.86	<1.0	<0.87	<0.92	<0.79	<0.79
Silver	20	40	1,500	500	50	100	<0.36	<0.41	<0.40	<0.48	<0.43	<0.50	<0.44	<0.46	<0.40	<0.39
Thallium	0.78	10	3.1	700	70	None	<0.71	<0.82	<0.80	<0.96	<0.86	<1.0	<0.87	<0.92	<0.79	<0.79
Vanadium	200	200	1,500	2,400	240	None	80	73	83	73	77	80	49	62	81	68
Zinc	600	600	93,000	5,000	2,500	None	93	97	80	180	76	75	110	85	75	65
Asbestos by California Air Resources Control Board Method 435																
Asbestos	None	None	None	1.0	None	None	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Soil pH by ASTM International Method 9045D																
pH	None	None	None	None	None	None	7.4	6.7	6.8	7.2	6.5	6.8	6.0	7.6	7.1	6.2

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
Analyte	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0
Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015B & 8260B															
TPH-g	100	500	2,700	None	None	None	<0.38	<0.31	<0.51	<0.32	<0.34	<0.44	<0.21	<0.20	<0.21
TPH-d	100	110	900	None	None	None	<1.9	<1.7	<2.0	<1.7	<1.9	<1.9	<1.3	<1.3	<1.2
TPH-mo	100	500	28,000	None	None	None	<9.3	9.0 Y	<9.8	<8.7	<9.4	<9.3	<6.4	<6.7	<6.0
Volatile Organic Compounds (VOCs) by USEPA Method 8260B															
Acetone	0.50	0.50	240,000	None	None	None	0.076	0.074	0.095	0.073	0.079	0.12	0.028	0.048	<0.017
Benzene	0.044	0.044	71	None	None	10	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Bromobenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Bromodichloromethane	0.48	1.5	48	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Bromoform	1.7	1.7	2,000	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Bromomethane (methyl bromide)	0.28	0.28	36	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
2-Butanone (methyl ethyl ketone)	4.5	4.5	130,000	None	None	4,000	0.015 J	0.0089 J	0.014 J	0.012 J	0.013 J	0.010 J	<0.0095	<0.011	<0.0084
n-Butylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
sec-Butylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
tert-Butylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Carbon disulfide	None	None	None	None	None	None	0.011	0.0028 J	0.014	0.0081 J	0.0057 J	0.0029 J	<0.0047	<0.0055	<0.0042
Carbon tetrachloride	0.11	0.11	14	None	None	10	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Chlorobenzene	1.5	1.5	5,000	None	None	2,000	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Chlorobromomethane (bromochloromethane)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Chlorodibromomethane (dibromochloromethane)	6.6	6.6	260	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Chloroethane (ethyl chloride)	1.1	1.1	170,000	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
Chloroform	1.1	2.4	130	None	None	120	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Chloromethane (methyl chloride)	20	20	430	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
2-Chlorotoluene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
4-Chlorotoluene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Cumene (isopropylbenzene)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Cymene (p-isopropyltoluene)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2-Dibromo-3-chloropropane	0.0045	0.0045	None	10 (*)	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2-Dibromoethane (ethylene dibromide)	0.00033	0.00033	5.2	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Dibromomethane (methylene bromide)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2-Dichlorobenzene	1.1	1.1	8,700	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,3-Dichlorobenzene	7.4	7.4	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0
1,4-Dichlorobenzene	0.59	0.59	330	None	None	150	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Dichlorodifluoromethane (Freon 12)	None	None	None	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
1,1-Dichloroethane (1,1-DCA)	0.20	0.20	410	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2-Dichloroethane (1,2-DCA)	0.0045	0.0045	40	None	None	10	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1-Dichloroethene (1,1-DCE)	1.0	1.0	1,100	None	None	14	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
cis-1,2-Dichloroethene (cis-1,2-DCE)	0.19	0.19	77	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
trans-1,2-Dichloroethene (trans-1,2-DCE)	0.67	0.67	550	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Dichloromethane (methylene chloride)	0.077	0.077	790	None	None	None	<0.036	0.0073 J	<0.039	<0.036	0.011 J	0.013 J	0.0029 J	<0.022	<0.017
1,2-Dichloropropane	0.12	0.12	62	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,3-Dichloropropane	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
2,2-Dichloropropane	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1-Dichloropropene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
cis-1,3-Dichloropropene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
trans-1,3-Dichloropropene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Ethylbenzene	3.3	3.3	490	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Hexachlorobutadiene	4.3	4.3	280	None	None	10	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
2-Hexanone (methyl butyl ketone)	None	None	None	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
Methyl tert-butyl ether (MTBE)	0.023	0.023	3,800	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
4-Methyl-2-pentanone (methyl isobutyl ketone)	2.8	2.8	150,000	None	None	None	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
Naphthalene	1.2	1.2	370	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
n-Propylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Styrene	1.5	1.5	28,000	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1,1,2-Tetrachloroethane	0.0091	0.0091	330	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1,2,2-Tetrachloroethane	0.018	0.018	38	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Tetrachloroethene (PCE)	0.55	0.70	31	None	None	14	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Toluene	2.9	2.9	4,300	None	None	None	<0.0090	0.0034 J	<0.0098	<0.0091	<0.012	0.0068 J	0.0019 J	<0.0055	<0.0042
1,2,3-Trichlorobenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2,4-Trichlorobenzene	1.5	1.5	600	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1,1-Trichloroethane (1,1,1-TCA)	7.8	7.8	44,000	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1,2-Trichloroethane (1,1,2-TCA)	0.070	0.070	87	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Trichloroethene (TCE)	0.46	0.46	24	2,040	2,040	10	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Trichlorofluoromethane (Freon 11)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0
1,2,3-Trichloropropane	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,2,4-Trimethylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
1,3,5-Trimethylbenzene	None	None	None	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Vinyl acetate	None	None	None	None	None	None	<0.090	<0.080	<0.098	<0.091	<0.12	<0.14	<0.047	<0.055	<0.042
Vinyl chloride	0.032	0.085	3.8	10 (*)	None	4	<0.018	<0.016	<0.020	<0.018	<0.024	<0.027	<0.0095	<0.011	<0.0084
m-, p-Xylene	2.3	2.3	2,500	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
o-Xylene	2.3	2.3	2,500	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Polycyclic Aromatic Hydrocarbons by USEPA 8270 Selective Ion Mode															
Acenaphthene	16	16	8,600	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Acenaphthylene	13	13	None	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Anthracene	2.8	2.8	43,000	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Benz(a)anthracene	0.38	1.3	8.3	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Benzo(a)pyrene	0.038	0.13	0.83	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Benzo(b)fluoranthene	0.38	1.3	8.3	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Benzo(g,h,i)perylene	27	27	None	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Benzo(k)fluoranthene	0.38	1.3	8.3	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Chrysene	3.8	13	83	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Dibenz(a,h)anthracene	0.11	0.38	2.4	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Fluoranthene	40	40	5,700	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Fluorene	8.9	8.9	5,700	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Indeno(1,2,3-c,d)pyrene	0.38	1.3	8.3	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Naphthalene	1.2	1.2	370	None	None	None	<0.0090	<0.0080	<0.0098	<0.0091	<0.012	<0.014	<0.0047	<0.0055	<0.0042
Phenanthrene	11	11	None	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Pyrene	85	85	8,600	None	None	None	<0.047	<0.044	<0.029	<0.0086	<0.047	<0.0093	<0.0063	<0.0067	<0.0061
Polychlorinated Biphenyls (PCBs) by USEPA Method 8082															
Aroclor-1016	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012
Aroclor-1221	0.22	0.74	2.7	50	50	None	<0.036	<0.033	<0.037	<0.033	<0.036	<0.036	<0.024	<0.026	<0.023
Aroclor-1232	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012
Aroclor-1242	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012
Aroclor-1248	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012
Aroclor-1254	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0
Aroclor-1260	0.22	0.74	2.7	50	50	None	<0.018	<0.017	<0.019	<0.017	<0.018	<0.018	<0.012	<0.013	<0.012
Organochlorine Pesticides (OCPs) by USEPA Method 8081A															
Aldrin	0.032	0.13	0.87	1.4	1.4	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
alpha-Chlordane (cis-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
gamma-Chlordane (trans-chlordane)	0.44	1.7	12	2.5	2.5	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
4,4'-DDD	2.4	10	70	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
4,4'-DDE	1.7	4.0	50	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
4,4'-DDT	1.7	4.0	50	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
DDD, DDE, DDT (5)	None	None	None	1.0	1	None	3.6E-05	5.1E-05	9.6E-05	8.4E-05	9.3E-05	9.3E-05	1.3E-05	1.3E-05	1.2E-05
Dieldrin	0.0023	0.0023	0.93	8.0	8	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
Endosulfan I	None	None	None	None	None	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
Endosulfan II	None	None	None	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
Endosulfan sulfate	None	None	None	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
Endrin	0.00065	0.00065	64	0.2	0.2	0.4	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
Endrin aldehyde	None	None	None	None	None	None	<0.012	<0.017	<0.032	<0.028	<0.031	<0.031	<0.0042	<0.0044	<0.0040
Heptachlor	0.013	0.013	3.6	4.7	4.7	0.16	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
Heptachlor epoxide	0.014	0.014	1.6	None	None	0.16	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
alpha-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
beta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
delta-Hexachlorocyclohexane	None	None	None	None	None	None	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
gamma-Hexachlorocyclohexane (lindane)	0.0098	0.0098	64	4.0	4	8	<0.0063	<0.0088	<0.017	<0.015	<0.016	<0.016	<0.0022	<0.0023	<0.0020
Methoxychlor	19	19	1,100	100	100	200	<0.063	<0.088	<0.17	<0.15	<0.16	<0.16	<0.022	<0.023	<0.020
Toxaphene	0.00042	0.00042	12	5	5	10	<0.22	<0.31	<0.58	<0.52	<0.56	<0.56	<0.076	<0.080	<0.072
CAM17 Metals by USEPA Method 6010B/7471A															
Antimony	20	40	120	500	150	None	1.5	2.6	3.1	2.6	3.1	2.7	2.2	2.4	1.4
Arsenic	0.39	1.6	10	500	50	100	***6.8***	***8.6***	***7.2***	***7.0***	***6.9***	***5.2***	***3.5***	***6.9***	***4.2***
Barium	750	1,500	61,000	10,000	1,000	2,000	40	38	43	44	38	41	150	110	110
Beryllium	4.0	8.0	180	75	7.5	None	0.54	0.48	0.58	0.52	0.54	0.56	0.69	0.51	0.34
Cadmium	12	12	110	100	10	20	1.2	1.2	1.3	1.2	1.2	1.2	0.92	0.96	0.65
Chromium, total	1,000	2,500	None	2,500	50	100	77	68	81	75	77	80	83	73	58
Cobalt	23	80	49	8,000	800	None	16	15	17	15	15	16	20	16	12
Copper	230	230	12,000	2,500	250	None	30	28	31	31	28	30	41	36	19

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

Analyte	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0
Lead	80	320	320	1,000	50	100	7.5	7.7	8.3	7.5	7.1	7.4	9.7	8.3	5.2
Mercury	6.7	10	27	20	2	4	0.054	0.051	0.066	0.065	0.048	0.056	0.10	0.085	0.042
Molybdenum	40	40	1,500	3,500	3,500	None	0.67	0.74	0.70	0.63	0.49	<0.44	0.84	0.65	0.52
Nickel	150	150	6,100	2,000	200	None	81	74	87	80	79	83	130	100	74
Selenium	10	10	1,500	100	10	20	<0.84	<0.78	<0.91	<0.79	<0.86	<0.88	<0.58	<0.69	<0.66
Silver	20	40	1,500	500	50	100	<0.42	<0.39	<0.45	<0.40	<0.43	<0.44	<0.29	<0.34	<0.33
Thallium	0.78	10	3.1	700	70	None	<0.84	<0.78	<0.91	<0.79	<0.86	<0.88	<0.58	<0.69	<0.66
Vanadium	200	200	1,500	2,400	240	None	59	55	62	58	59	63	54	46	38
Zinc	600	600	93,000	5,000	2,500	None	77	70	84	75	77	82	92	75	44
Asbestos by California Air Resources Control Board Method 435															
Asbestos	None	None	None	1.0	None	None	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Soil pH by ASTM International Method 9045D															
pH	None	None	None	None	None	None	8.0	8.0	8.1	8.1	8.0	8.0	8.7	7.3	7.7

Notes:

(1) Acronyms are indicated as follows:

ESLs - Environmental Screening Levels

Res - Residential Tier 1 ESL

Com - Commercial Tier 1 ESL

C/T - Construction/Trench Worker ESL

TTLC - Total Threshold Limit Concentration

10×STLC - Ten times the Solubility Threshold Limit Concentration

20×TCLP - Twenty times the Toxicity Characteristic Leaching Procedure

USEPA - United States Environmental Portection Agency

TPH-g - Total Petroleum Hydrocarbons in the gasoline range

TPH-d - Total Petroleum Hydrocarbons in the diesel range

TPH-mo - Total Petroleum Hydrocarbons in the motor oil range

(2) Laboratory and screening criteria qualifiers are indicated as follows:

Y - Sample exhibits chromatographic pattern which does not resemble standard

J - Estimated value

C - Presence confirmed, but RPD between columns exceeds 40%

(*) - Screening criteria applies to the sum of compounds indicated

(3) Units are indicated as follows:

Table 2. Summary of Soil Analytical Results - TPH, VOC, PAH, PCB, OCP, Metals, Asbestos and pH

	ESLs			Hazardous Waste Screening Criteria			Soil Sampling Results								
Analyte	Res	Com	C/T	TTLC	10×STLC	20×TCLP	IE-11-15.0	IE-11-25.0	IE-12-15.0	IE-12-25.0	IE-13-15.0	IE-13-30.0	IE-13-45.0	IE-13-60.0	IE-13-75.0

Depths are reported in feet below ground surface (ft bgs).

Results are reported in milligrams per kilogram (mg/kg), with the exception of asbestos reported in percentage (%) and pH which has no units.

(4) Soil sampling results are reported on a dry-weight basis for comparison to San Francisco Bay Regional Water Quality Control Board (RWQCB) Tier 1 residential and commercial ESLs (ESLs Tables A-1 and A-2) (Cal/EPA 2013). The Tier 1 ESLs are protective of: direct exposures (i.e., human health), leaching to groundwater and subsequent degradation of the groundwater resource, terrestrial biota, and nuisance (e.g., odor) concerns. Soil sampling results are also compared to direct exposure ESLs for the construction/trench worker exposure scenario (Cal/EPA 2013). The construction/trench worker ESLs are protective of: direct exposures (i.e., human health). Soil sampling results are also compared to TTLC, 10×STLC, and 20×TCLP for waste disposal and resuse purposes.

(5) DDD, DDE, DDT is the sum of reported values where detect, and reporting limits where non-detect.

(6) Results that are reported as non-detect by the lab are presented with a less than sign ("<") followed by the laboratory reporting limit (RL).

(7) **Bold** font indicates a detection above the Tier 1 Residential ESL

(8) ***Bold Italic*** font indicates a detection above the Tier 1 Commercial ESL

(9) *Italic* font indicates a detection above the Construction/Trench worker ESL

(10) Double Underlined font indicates a detection above the TTLC

(11) Underlined font indicates a detection above the 10×STLC

(12) Underlined Cell indicates a detection above the 20×TCLP

Table 3. Summary of Soil Analytical Results - WET and TCLP Chromium

Sample ID	STLC & TCLP Chromium Limit (mg/L)	WET Chromium (mg/L)	TCLP Chromium (mg/L)
IE-01-02.0	5.0	0.42	<0.050
IE-01-04.0	5.0	<0.25	–
IE-02-02.0	5.0	0.51	–
IE-02-04.0	5.0	0.36	<0.050
IE-03-02.0	5.0	I	–
IE-03-04.0	5.0	<0.25	–
IE-04-02.0	5.0	0.76	<0.050
IE-04-04.0	5.0	1.2	<0.050
IE-05-02.0	5.0	0.85	<0.050
IE-05-04.0	5.0	0.36	<0.050
IE-06-02.0	5.0	0.31	<0.050
IE-06-04.0	5.0	0.45	–
IE-07-02.0	5.0	0.25	I
IE-07-04.0	5.0	0.37	<0.050
IE-08-02.0	5.0	0.26	–
IE-08-04.0	5.0	<0.25	–
IE-09-01.0	5.0	I	–
IE-09-04.5	5.0	0.26	–
IE-10-02.0	5.0	0.48	<0.050
IE-10-04.0	5.0	0.57	–
IE-11-15.0	5.0	I	–
IE-11-25.0	5.0	<0.25	–
IE-12-15.0	5.0	I	–
IE-12-25.0	5.0	<0.25	–
IE-13-15.0	5.0	<0.25	–
IE-13-30.0	5.0	<0.25	–
IE-13-45.0	5.0	<0.25	–
IE-13-60.0	5.0	<0.25	–
IE-13-75.0	5.0	<0.25	–

Notes:

(1) Acronyms and symbols are as follows:

STLC - Solubility Threshold Limit Concentration

Table 3. Summary of Soil Analytical Results - WET and TCLP Chromium

Sample ID	STLC & TCLP Chromium Limit	WET Chromium	TCLP Chromium
	(mg/L)	(mg/L)	(mg/L)

TCLP - Toxicity Characterisitic Leaching Procedure

WET - California Waste Extraction Test

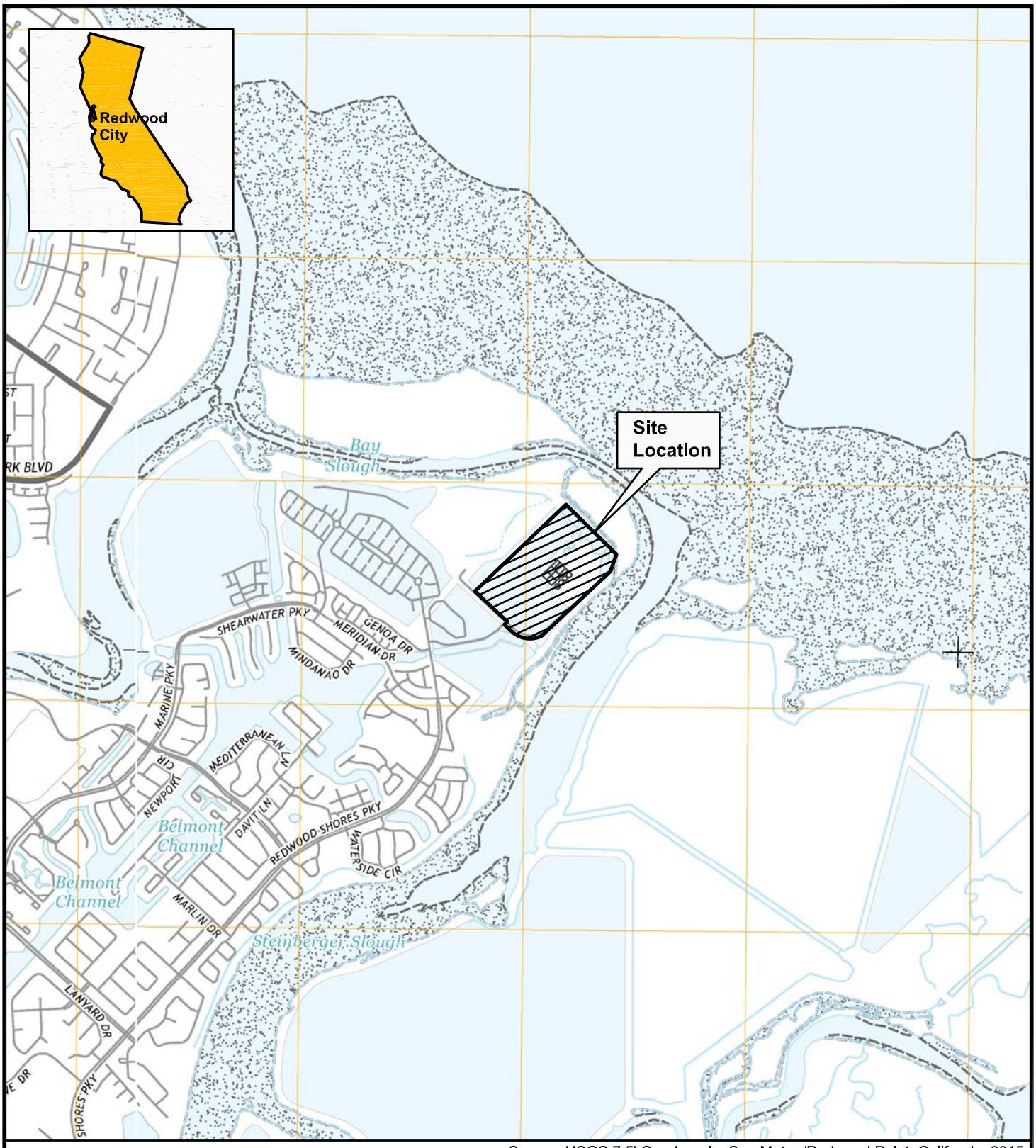
"–" - indicates no extraction was necessary.

I - indicates sample exceeded the 10×STLC or 20×TCLP, but insufficient sample remained to run extraction.

mg/L - Milligrams per liter

(2) Results that are reported as non-detect by the lab are presented with a less than sign ("<") followed by the laboratory reporting limit.

FIGURES



Source: USGS 7.5' Quadrangle, San Mateo/Redwood Point, California, 2015

N

0 1000 2000 4000

SCALE IN FEET

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612
Ph. (510) 834-4747 Fax: (510) 834-4199

Site Vicinity Map
Silicon Valley Clean Water
1400 Radio Road
Redwood City, California

Figure
1

Drafter: EC | Date: 01/07/16 | Contract Number: 15-1313A

I:\CAD\15\15-1313-A\site vicinity.dwg

LEGEND:

Basemap: Google Earth March 28, 2015

Approximate Site boundary

Site investigation area

Planned infrastructure improvements

RLS	Receiving lift station
HW	Headworks structure
PFDS	Peak flow diversion structure

All locations are approximate

N

0 150 300 600

SCALE IN FEET

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612
Ph. (510) 834-4747 Fax: (510) 834-4199

Site Plan
Silicon Valley Clean Water
1400 Radio Road
Redwood City, California

Figure
2

Drafter: EC | Date: 01/07/16 | Contract Number: 15-1313A

LEGEND:

Basemap: Google Earth March 28, 2015

- Approximate Site boundary
- Site investigation area
- Planned infrastructure improvements
- RLS Receiving lift station
- HW Headworks structure
- PFDS Peak flow diversion structure
- Soil boring locations for reuse evaluation
- Soil borings to 5 feet bgs
- Soil borings to 25 feet bgs
- Soil boring to 75 feet bgs
- bgs Below the ground surface

All locations are approximate

N

0 150 300 600

SCALE IN FEET

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612
Ph. (510) 834-4747 Fax: (510) 834-4199

Site Plan with Soil Boring Locations for Reuse Evaluation
Silicon Valley Clean Water
1400 Radio Road
Redwood City, California

Figure
3

Drafter: EC | Date: 11/30/15 | Contract Number: 15-1313A

01,07,16

APPENDIX A

SOIL BORING DRILLING PERMIT

ORDINANCE: 04023

ENVIRONMENTAL HEALTH
SAN MATEO COUNTY

Protecting Our Health and Environment

PERMIT 15- 2191

P/E: 2010 **MONITORING WELLS - INSTALLATION/DESTRUCTION**

FACILITY:
1400 RADIO RD, REDWOOD CITY

OWNER:
SILICON VALLEY CLEAN WATER
1400 RADIO RD
REDWOOD CITY

WP0010565 FA0057648
095450010
AMOUNT PAID: 629.00

CONTRACTOR:
ENVIRONMENTAL CONTROL AS

TERMS & CONDITIONS:

CONSTRUCT SOIL BORINGS (13)
CONSULTANT: IRIS ENVIRONMENTAL
PROJECT MANAGER: CRAIG PELLETIER

CYNTHIA FRICKLE
ENVIRONMENTAL HEALTH SPECIALIST

DATE ISSUED: 10/30/2015

EXPIRATION DATE: 3/1/2016

THIS PERMIT IS NONTRANSFERABLE AND MUST BE POSTED ON-SITE IN A CONSPICUOUS PLACE

 2015 SUBSURFACE DRILLING PERMIT APPLICATION - REVISED AUGUST 1

REQUIREMENTS:

An accurate and correct map **must** be submitted with the application and include the following: north arrow, existing and historic site features, existing and proposed well/boring locations to scale, property lines and any other pertinent information. A work plan describing the drilling and construction/destruction methodology may be requested by County staff. Upon review of information on this application, and subject to approval noted below, a permit will be issued allowing the well/boring owner, driller, and responsible professional to perform the specified work. The permit is subject to both General and Special Conditions stated below. A copy of the approved Subsurface Drilling Permit **must** be available on site while work related to the permit is being performed. Drilling may begin at the notified date and time whether County staff is present or not.

GENERAL CONDITIONS:

A. Field notification must be provided to GPP drilling inspection staff at least 2 full days prior to the start of drilling.

B. Well and boring construction and destruction under this permit is subject to the Standards for the Construction of Wells in San Mateo County, County Groundwater Protection Program (GPP) Guidelines, Policies & Procedures, the State Water Well Standards, and any instructions by a Health Department representative.

C. Well/Boring Owner, Driller, and Responsible Professional assume responsibility for all activities and uses under the permit, including compliance with Workmen's Compensation Laws, and indemnify, defend and save the County of San Mateo, its officers, agents and employees, free and harmless from any and all expense, cost, or liability in connection with or resulting from work or stopped-work associated with the permit, including, but not limited to, property damage, personal injury, wrongful death, and loss of income.

D. All borings **must** be properly destroyed (grouted/sealed) within 24 hours of drilling, unless special conditions are approved in writing as part of this permit, and must be continuously protected and stabilized. Temporary soil vapor wells may remain in place up to 7 days with just an additional notification for removal. Provide final grout volumes for destructions.

E. Analytical results of all soil, vapor, and groundwater samples collected during the execution of drilling under this permit **must** be submitted to County GPP staff by the Responsible Professional within 60 days of sample collection. If contamination is discovered during drilling, verbal notification to County GPP by the Responsible Professional is **required** within 72 hours of discovery. Proper storage, labeling & disposal of investigation-derived residual wastes are the responsibility of the consultant unless stated otherwise contractually. Provide justification for >10% difference between calculated versus actual grout used.

F. A copy of the State DWR Form 188, boring logs, well construction details, and finalized as-built locations for all borings/ wells (except geotechnical borings) signed by a Responsible Professional, **must** be submitted to County GPP by the Responsible Professional within 60 days of drilling/construction/destruction.

G. Permit is valid only for the purpose specified herein. No change in purpose or required procedures, as described on this permit application, in the associated workplan, or in the special conditions below, will be allowed except upon written permission from the County. Construction aspects can be changed based on conditions encountered in the field.

H. Permit is valid for **one** mobilization associated with originally permitted boring/well locations only, including contingency locations, and is automatically canceled if not exercised, or if an extension is not applied for and granted within 120 days of the original permit issuance date. Failure to notify staff of cancellation or delay in start time will result in the Consultant being billed an Inspection Cancellation fee of $264 for 2015 if GPP staff attempted to perform an inspection.

I. Wells installed under this permit may not be used for domestic, municipal, agricultural, or irrigation water supply.

J. All work performed **must** conform to Business and Profession Codes and State Water Well Standards.

K. Top-of-casing elevation of all wells **must** be surveyed to the nearest 0.01-foot relative to Mean Sea Level or NAVD88 and submitted to County GPP within 60 days of drilling, and to State GeoTracker as appropriate. Geotechnical wells are exempt from this requirement if a written variance from GPP is obtained prior to drilling.

L. Latitude and longitude of all wells **must** be surveyed with sub-meter accuracy relative to NAD83 and submitted to County GPP within 60 days of drilling, and to State GeoTracker as appropriate.

M. Violation of any requirement or general or special permit condition may result in an order by GPP staff to cease work under this permit, correct the violation, potentially re-permit the work as a new mobilization, and potential actions may be taken against the Well Owner, Property Owner, or Responsible Professional by GPP.

SPECIAL CONDITIONS: _____
(agency use only)

For Agency Use Only:
County Approval: Jayaluna Fraclee FA# _____ Date: 10/29/15

APPENDIX B

SOIL BORING LOGS

Iris Environmental
1438 Webster Street, Suite 302
Oakland, CA 94612
Telephone: (510) 834-4747
Fax: (510) 834-4199

BORING NUMBER IE-01

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-01-02.0	1600			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-01-04.0	1605			▽ becomes wet.	
6						Bottom of Borehole at 6 feet.	

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

ENVR DIRECT PUSH - IRIS SEPT08.GDT - 1/8/16 09:17 - I:\CAD\15\15-1313-A\BORING LOGS.GPJ

Iris Environmental
1438 Webster Street, Suite 302
Oakland, CA 94612
Telephone: (510) 834-4747
Fax: (510) 834-4199

BORING NUMBER IE-02

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Hand Auger **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Hand Auger **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Hand Auger
GW DEPTH DURING DRILLING 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-02-02.0	1600			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-02-04.0	1605				
6						▽ becomes wet.	

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-03

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						SANDY SILT (ML), dark greenish gray (GLEY 1 4/1), dry, hard, low plasticity, (10, 40, 50), some coarse gravels.	
						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity (0, 0, 100), some sand, some wood and roots.	
2		IE-03-02.0	1435	0.1		becomes less sandy.	
						becomes softer.	
4							
						▽ becomes very soft.	
6							

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-04

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Hand Auger **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Hand Auger **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Hand Auger
GW DEPTH DURING DRILLING 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-04-02.0	1425			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-04-04.0	1430				
6						▽ becomes wet.	

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-05

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Hand Auger **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Hand Auger **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Hand Auger
GW DEPTH DURING DRILLING 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-05-02.0	1640			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-05-04.0	1700				
6						▽ becomes wet.	

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-06

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-06-02.0	1450			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-06-04.0	1455			▽ becomes wet.	
6						Bottom of Borehole at 6 feet.	

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-07

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Hand Auger **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Hand Auger **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Hand Auger
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-07-02.0	1435			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-07-04.0	1440				
6						▽ becomes wet.	

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-08

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Hand Auger **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Hand Auger **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Hand Auger
GW DEPTH DURING DRILLING 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-08-02.0	1500			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-08-04.0	1510				
6						▽ becomes wet.	

Bottom of Borehole at 6 feet.

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-09

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
		IE-09-01.0	1015	0.0			
2						becomes damp, soft, medium plasticity, (0, 0, 100).	
4						shells encountered.	
		IE-09-04.5	1030	0.0			
						▽ becomes wet, sand lenses.	
6						Bottom of Borehole at 6 feet.	

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-10

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 6.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 5.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
2		IE-10-02.0	1530			becomes damp, soft, medium plasticity, (0, 0, 100).	
4		IE-10-04.0	1535			▽ becomes wet.	
6						Bottom of Borehole at 6 feet.	

Drilling Notes:

1. Boring terminated at 6.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-11

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 28.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 4.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand and silt encountered at surface, some orange mottling.	
2							
4						▽ becomes damp, soft, medium plasticity, (0, 0, 100).	
6						becomes damp.	
8							
10							

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Fax: (510) 834-4199

BORING NUMBER IE-11

PROJECT NAME Silicon Valley Clean Water **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE	SAMPLES: RECOVERY RETAINED	SAMPLES: SAMPLE NUMBER	SAMPLES: TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
10								
12								
14								
			IE-11-15.0	1120	0			
16								
18								
20								

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BORING NUMBER IE-11

PROJECT NAME Silicon Valley Clean Water **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
22						shells encountered.	
24							
		IE-11-25.0	1155	0			
26							
28							

Bottom of Borehole at 28 feet.

Drilling Notes:

1. Boring terminated at 28.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-12

PROJECT NAME Silicon Valley Clean Water
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG 54 LT Limited Access Track Rig **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Macro-core **TOTAL DEPTH** 28.0 ft
DRILLING METHOD Direct Push
▽ **GW DEPTH DURING DRILLING** 2.5 ft
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand and silt encountered at surface, some orange mottling.	
2						▽ becomes wet.	
4						becomes damp.	
6						wood.	
8						becomes darker in color.	
10							

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BORING NUMBER IE-12

PROJECT NAME Silicon Valley Clean Water **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE	SAMPLES: RECOVERY RETAINED	SAMPLES: SAMPLE NUMBER	SAMPLES: TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
10								
12							becomes dark gray (GLEY 1 4/N).	
14								
			IE-12-15.0	1055	0			
16								
18								
20								

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BORING NUMBER IE-12

PROJECT NAME Silicon Valley Clean Water **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE	SAMPLES: RECOVERY RETAINED	SAMPLES: SAMPLE NUMBER	SAMPLES: TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
22								
24								
			IE-12-25.0	1105	0			
26								
28								

Bottom of Borehole at 28 feet.

Drilling Notes:

1. Boring terminated at 28.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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BORING NUMBER IE-13

PROJECT NAME Freyer & Laureta
CLIENT Freyer & Laureta
PROJECT NUMBER 15-1313A
PROJECT LOCATION 1400 Radio Road, Redwood City, CA
DATE STARTED 11/3/15 **COMPLETED** 11/3/15
DRILL RIG Geoprobe 5410 **HOLE DIAM.** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates
SAMPLER TYPE Dual-Tube **TOTAL DEPTH** 76.0 ft
DRILLING METHOD Core Barel
GW DEPTH DURING DRILLING --- Groundwater encountered at various dep
LOGGED BY Claudia Mack **CHECKED BY**
BOREHOLE BACKFILL Neat Cement Grout
NOTES

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						CLAY (CL), dark greenish gray (GLEY 1 4/1), dry, firm, low plasticity, (0, 0, 100), sand encountered at surface, some orange mottling.	
						becomes wet.	
5						organic material.	
						becomes damp.	
10							
15		IE-13-15.0	1215	0.1		becomes wetter, soft.	
20							
25							
30						becomes wet.	

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BORING NUMBER IE-13

PROJECT NAME Freyer & Laureta **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
30		IE-13-30.0	1230	0.1 (0.2)			
35							
40						becomes dry.	
						becomes moist.	
45		IE-13-45.0	1250	0.2		CLAY (CH), greenish gray (GLEY 1 5/1), moist, hard, high plasticity, (0, 0, 100).	
						becomes light olive brown (2.5Y 5/6).	
50						becomes damp.	
						becomes wet, caliche nodules.	
						becomes moist.	
55							
60		IE-13-60.0	1320	0.3 (0.2)		becomes wet.	
						becomes sandier (0, 10, 90).	
						becomes moist.	
						SAND WITH SILT (SP), light olive brown (2.5Y 5/6), wet, medium density, fine sand to medium sand, poorly graded, (0, 90, 10), heaving sands.	At 62.0 ft. bgs., heaving sands entered up 15 feet of drilling rods and

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Fax: (510) 834-4199

BORING NUMBER IE-13

PROJECT NAME Freyer & Laureta **CLIENT** Freyer & Laureta

PROJECT NUMBER 15-1313A **PROJECT LOCATION** 1400 Radio Road, Redwood City, CA

DEPTH (FEET)	SAMPLES: DRIVE / RECOVERY / RETAINED	SAMPLE NUMBER	TIME	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
65						becomes siltier. becomes sandy as before.	water entered up to 2 ft. bgs. No recovery from 68-73.0 ft. bgs. because of heaving sands.
70							
75		IE-13-75.0	1340				

Bottom of Borehole at 76 feet.

Drilling Notes:

1. Boring terminated at 76.0 feet below ground surface.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions at the location and time the boring was drilled.

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APPENDIX C

SOIL ANALYTICAL LABORATORY REPORTS AND CHAIN OF CUSTODY INFORMATION

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 271270
ANALYTICAL REPORT

Iris Environmental
1438 Webster Street
Oakland, CA 94612

Project : 15-1313A
Location : SVCW WTP
Level : II

Sample ID	Lab ID	Sample ID	Lab ID
IE-10-04.0	271270-001	IE-02-04.0	271270-016
IE-04-02.0	271270-002	IE-01-02.0	271270-017
IE-04-04.0	271270-003	IE-01-04.0	271270-018
IE-07-02.0	271270-004	IE-10-02.0	271270-019
IE-07-04.0	271270-005	IE-09-01.0	271270-020
IE-06-02.0	271270-006	IE-09-04.5	271270-021
IE-06-04.0	271270-007	IE-12-15.0	271270-022
IE-05-02.0	271270-008	IE-12-25.0	271270-023
IE-05-04.0	271270-009	IE-11-15.0	271270-024
IE-13-75.0	271270-010	IE-11-25.0	271270-025
IE-03-02.0	271270-011	IE-13-15.0	271270-026
IE-03-04.0	271270-012	IE-13-30.0	271270-027
IE-08-02.0	271270-013	IE-13-45.0	271270-028
IE-08-04.0	271270-014	IE-13-60.0	271270-029
IE-02-02.0	271270-015		

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 11/13/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**271270**
Client:	**Iris Environmental**
Project:	**15-1313A**
Location:	**SVCW WTP**
Request Date:	**11/03/15**
Samples Received:	**11/03/15**

This data package contains sample and QC results for twenty nine soil samples, requested for the above referenced project on 11/03/15. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
Matrix spikes were not performed for this analysis in batch 229152 because of clock limitations; 5030 rushes were added to a 5035 batch. High recovery was observed for chlorobenzene in the MSD for batch 229043; the parent sample was not a project sample, the BS/BSD were within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. High surrogate recoveries were observed for 1,2-dichloroethane-d4 in a number of samples. Methylene chloride was detected between the MDL and the RL in many samples; this analyte is a common laboratory contaminant. Many samples were not diluted; the low sample weight is due to 5035 packaging. No other analytical problems were encountered.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM):
Many samples were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

Pesticides (EPA 8081A):
All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. All samples underwent florisil cleanup using EPA Method 3620C. High surrogate recoveries were observed for decachlorobiphenyl in a number of samples; no target analytes were detected in these samples. High surrogate recovery was observed for TCMX in IE-12-25.0 (lab # 271270-023); no target analytes were detected in the sample. Many samples were diluted due to the color of the sample extracts. No other analytical problems were encountered.

PCBs (EPA 8082):
All samples underwent sulfuric acid cleanup using EPA Method 3665A. All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. No analytical problems were encountered.

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**271270**
Client:	**Iris Environmental**
Project:	**15-1313A**
Location:	**SVCW WTP**
Request Date:	**11/03/15**
Samples Received:	**11/03/15**

Metals (EPA 6010B and EPA 7471A):
No analytical problems were encountered.

pH (EPA 9045D):
No analytical problems were encountered.

Moisture (EPA CLP):
No analytical problems were encountered.

CARB 435 Asbestos (CARB 435):
Forensic Analytical in Hayward, CA performed the analysis (not NELAP certified). Please see the Forensic Analytical case narrative.

271270

IRIS ENVIRONMENTAL — CHAIN-OF-CUSTODY

1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

Date: 11 / 3 / 15 Page: 1 of 3 **Nº** 003452

Sampler Name(s): Bill Chen, Claudia Mack

Signature(s):

Analyses Required

	Sample ID	Date	Time	Matrix	Pres.	TPH-g 8260B	TPH d/mo +SGC	VOCs 8260B	PAHs 8270 SIM	PCB 8082	CAM17 Metals 6010B/7471	OCPs 8081	Asbestos CARB435	pH 9045C	Moisture CLP	Number of Containers
1	IE-10-04.0	11/3/15	1535	soil	1 unpres 1 H2SO4	X	X	X	X	X	X	X	X	X	X	7
2	IE-04-02.0		1425			X	X	X	X	X	X	X	X	X	X	
3	IE-04-04.0		1430			X	X	X	X	X	X	X	X	X	X	
4	IE-03-02.0		1435			X	X	X	X	X	X	X	X	X	X	
5	IE-03-04.0		1440			X	X	X	X	X	X	X	X	X	X	
6	IE-06-02.0		1450			X	X	X	X	X	X	X	X	X	X	
7	IE-06-04.0		1455			X	X	X	X	X	X	X	X	X	X	
8	IE-05-02.0		1040			X	X	X	X	X	X	X	X	X	X	
9	IE-05-04.0		1750			X	X	X	X	X	X	X	X	X	X	

PROJECT INFORMATION

Project Name: SVCW WTP
Project Number: 15-1313A
Contact Person: C Pelletier, B. Chen, C Mack
E-mail: craig@irisenv.com, bill@irisenv.com, cmack@irisenv.com
Contact Telephone: 510-834-4747
Report: Routine (Level 2) Level 3 Level 4 EDD
TAT: 10-day 5-day 72-hr 48-hr 24-hr Other:

Special Instructions/Comments:

Report Dry-weight basis

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature:	Signature:
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015 19.33	Time/Date: 11/03/15 19 33
RELINQUISHED BY:	**RECEIVED BY:**
Printed Name:	Printed Name:
Signature:	Signature:
Company:	Company:
Time/Date:	Time/Date:

271270

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

CHAIN-OF-CUSTODY

Date: 10/3/15 Page: 2 of 3 № 003797

Sampler Name(s): Bill Chen, Claudia Mack
Signature(s): [signature]

Analyses Required

	Sample ID	Date	Time	Matrix	Pres.	TPH-g 8260B	TPH 8015 +SGC	VOCs 8260B	PAHs 8270SIM	PCB 8082	CAM17 Metals 6010 7471	OZPs 8081	Asbestos CARB435	pH 9045C	Moisture CLP						Number of Containers
10	IE-13-75.0	10/3/15	1340	soil	1 Meat 4 UPBW	X	X	X	X	X	X	X	X	X	X						7
11	IE-03-02.0		1435			X	X	X	X	X	X	X	X	X	X						7
12	IE-03-04.0		1455			X	X	X	X	X	X	X	X	X	X						7
13	IE-08-02.0		1500			X	X	X	X	X	X	X	X	X	X						7
14	IE-08-04.0		1510			X	X	X	X	X	X	X	X	X	X						7
15	IE-02-02.0		1515			X	X	X	X	X	X	X	X	X	X						7
16	IE-02-04.0		1520			X	X	X	X	X	X	X	X	X	X						7
17	IE-01-02.0		1600			X	X	X	X	X	X	X	X	X	X						7
18	IE-01-04.0		1605			X	X	X	X	X	X	X	X	X	X						7
19	IE-10-02.0		1530			X	X	X	X	X	X	X	X	X	X						7

PROJECT INFORMATION

Project Name: SVCW WTP
Project Number: 15-1313A
Contact Person: C Pelletier, B Chen, C Mack
E-mail: craig@irisenv.com, bill@irisenv.com, claudia@irisenv.com
Contact Telephone: (510) 834-4747
Report: Routine (Level 2) Level 3 Level 4 EDD
TAT: 10-day 5-day 72-hr 48-hr 24-hr Other:

Special Instructions/Comments:
Report Dry-weight Basis

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature: [signature]	Signature: [signature]
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015 19:33	Time/Date: 11/03/15 1933

RELINQUISHED BY:	RECEIVED BY:
Printed Name	Printed Name
Signature	Signature
Company	Company
Time/Date	Time/Date

271270

IRIS ENVIRONMENTAL — CHAIN-OF-CUSTODY

1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

Date: 11/3/15 Page: 3 of 3 No: 2887

Sampler Name(s): Bill Chen, Claudia Mack

Signature(s):

Sample ID	Date	Time	Matrix	Pres.	TPH-g 8260B	TPHd/mo+SGC 8015M	VOCs 8260B	PAHs 8270SIM	PCB 8082	CAM17Metals 6010/7471	OCPs 8081	Asbestos CARB435	PH 9045C	Moisture CLP						Number of Containers
20 IE-09-01.0	11/3/15	1015	soil	1 MeOH 4 unpres	X	X	X	X	X	X	X	X	X	X						7
21 IE-09-04.5		1030			X	X	X	X	X	X	X	X	X	X						7
22 IE-12-15.0		1055			X	X	X	X	X	X	X	X	X	X						7
23 IE-12-25.0		1105			X	X	X	X	X	X	X	X	X	X						7
24 IE-11-15.0		1120			X	X	X	X	X	X	X	X	X	X						7
25 IE-11-25.0		1155			X	X	X	X	X	X	X	X	X	X						7
26 IE-13-15.0		1215			X	X	X	X	X	X	X	X	X	X						7
27 IE-13-30.0		1230			X	X	X	X	X	X	X	X	X	X						7
28 IE-13-45.0		1250			X	X	X	X	X	X	X	X	X	X						7
29 IE-13-60.0		1320			X	X	X	X	X	X	X	X	X	X						7

PROJECT INFORMATION

Project Name: ~~SVWTP~~ SVCW WTP

Project Number: 15-1334

Contact Person: C. Pelletier, B. Chen, C. Mack

E-mail: craig@irisenv.com, bill@irisenv.com, claudia@irisenv.com

Contact Telephone: (510) 834-4747

Report: Routine (Level 2) Level 3 Level 4 (EDD)

TAT: 10-day (5-day) 72-hr 48-hr 24-hr Other:

Special Instructions/Comments:

Report Dry-weight Basis.

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature:	Signature:
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015, 19:33	Time/Date: 11/03/15 19:33
RELINQUISHED BY:	**RECEIVED BY:**
Printed Name:	Printed Name:
Signature:	Signature:
Company:	Company:
Time/Date:	Time/Date:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 271270 Date Received 11/3/15 Number of coolers 1
Client IRIS Project SVCW WTP

Date Opened 11/3 By (print) SC (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☐ Temperature blank(s) included? ☐ Thermometer ☐ IR Gun

☒ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ (YES) NO
   If YES, what time were they transferred to freezer? 11/03/15 @ 2325
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ (YES) NO N/A
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____

_____

_____

_____

_____

_____

Rev 11, 10/15

Curtis & Tompkins, Ltd.

Detections Summary for 271270

Results for any subcontracted analyses are not included in this summary.

Client : Iris Environmental
Project : 15-1313A
Location : SVCW WTP

Client Sample ID : IE-10-04.0 Laboratory Sample ID : 271270-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Motor Oil C24-C36	9.6	Y	7.6		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	76		16	2.6	ug/Kg	Dry	0.5252	EPA 8260B	EPA 5035
Carbon Disulfide	0.88	J	4.0	0.38	ug/Kg	Dry	0.5252	EPA 8260B	EPA 5035
2-Butanone	16		8.0	1.1	ug/Kg	Dry	0.5252	EPA 8260B	EPA 5035
Antimony	3.7		0.79		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	4.9		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	40		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.41		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.0		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	92		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	7.5		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	21		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	4.0		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.041		0.024		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	1.7		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	55		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	68		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	65		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	34		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.2		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : IE-04-02.0 Laboratory Sample ID : 271270-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	140		55	9.1	ug/Kg	Dry	1.538	EPA 8260B	EPA 5035
Methylene Chloride	25	J	55	1.2	ug/Kg	Dry	1.538	EPA 8260B	EPA 5035
Carbon Disulfide	4.5	J	14	1.3	ug/Kg	Dry	1.538	EPA 8260B	EPA 5035
2-Butanone	20	J	27	3.9	ug/Kg	Dry	1.538	EPA 8260B	EPA 5035
Toluene	16		14	0.87	ug/Kg	Dry	1.538	EPA 8260B	EPA 5035
Antimony	2.1		0.84		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	3.2		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	61		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.51		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.0		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	9.8		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	26		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	15		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.093		0.032		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.5		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	68		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	77		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	90		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	44		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.2		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-04-04.0 Laboratory Sample ID : 271270-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	220		50	8.2	ug/Kg	Dry	1.462	EPA 8260B	EPA 5035
Methylene Chloride	24	J	50	1.1	ug/Kg	Dry	1.462	EPA 8260B	EPA 5035
Carbon Disulfide	2.6	J	12	1.2	ug/Kg	Dry	1.462	EPA 8260B	EPA 5035
2-Butanone	46		25	3.5	ug/Kg	Dry	1.462	EPA 8260B	EPA 5035
Toluene	0.89	J	12	0.79	ug/Kg	Dry	1.462	EPA 8260B	EPA 5035
Antimony	3.7		0.79		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.8		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	110		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.64		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.6		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	360		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	13		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	59		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	38		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.075		0.030		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	9.0		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	84		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	80		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	240		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	41		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : IE-07-02.0 Laboratory Sample ID : 271270-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	120		38	6.2	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
Carbon Disulfide	1.4	J	9.4	0.90	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
2-Butanone	26		19	2.7	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
Antimony	2.8		0.80		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	8.0		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	53		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.50		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.3		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	9.7		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	26		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	9.3		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.032		0.028		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.4		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	64		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	83		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	80		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	43		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.8		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-07-04.0 Laboratory Sample ID : 271270-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	110		36	5.9	ug/Kg	Dry	1.035	EPA 8260B	EPA 5035
2-Butanone	18		18	2.4	ug/Kg	Dry	1.035	EPA 8260B	EPA 5035
Antimony	3.1		0.96		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.8		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	83		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.57		0.19		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	12		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	40		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	25		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.038		0.028		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	3.5		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	72		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	73		0.48		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	180		1.9		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	42		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.2		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-06-02.0 Laboratory Sample ID : 271270-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1.9	Y	1.5		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	9.6	Y	7.4		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	4.7	J	26	4.3	ug/Kg	Dry	0.8881	EPA 8260B	EPA 5035
Carbon Disulfide	1.2	J	6.5	0.62	ug/Kg	Dry	0.8881	EPA 8260B	EPA 5035
Antimony	3.3		0.71		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	11		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	44		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.42		0.14		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.1		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	100		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	10		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	29		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	5.3		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.12		0.025		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.3		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	68		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	80		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	93		1.4		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	32		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.4		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-06-04.0 Laboratory Sample ID : 271270-007

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	230		32	5.3	ug/Kg	Dry	0.9804	EPA 8260B	EPA 5035
2-Butanone	23		16	2.2	ug/Kg	Dry	0.9804	EPA 8260B	EPA 5035
Antimony	2.0		0.82		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.9		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	51		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.65		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	99		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	14		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	35		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	8.1		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.037		0.027		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	1.7		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	73		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	73		0.41		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	97		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	39		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.7		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-05-02.0 Laboratory Sample ID : 271270-008

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	93		35	5.8	ug/Kg	Dry	1.040	EPA 8260B	EPA 5035
Carbon Disulfide	1.3	J	8.8	0.84	ug/Kg	Dry	1.040	EPA 8260B	EPA 5035
2-Butanone	19		18	2.5	ug/Kg	Dry	1.040	EPA 8260B	EPA 5035
Antimony	3.2		0.77		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.6		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	58		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.50		0.15		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	9.7		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	29		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	12		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.051		0.029		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	3.0		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	65		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	89		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	86		1.5		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	41		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-05-04.0 Laboratory Sample ID : 271270-009

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	92		34	5.5	ug/Kg	Dry	1.025	EPA 8260B	EPA 5035
Carbon Disulfide	1.1	J	8.4	0.80	ug/Kg	Dry	1.025	EPA 8260B	EPA 5035
2-Butanone	19		17	2.4	ug/Kg	Dry	1.025	EPA 8260B	EPA 5035
Antimony	2.7		0.75		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.4		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	51		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.48		0.15		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	100		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.9		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	27		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	9.0		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.043		0.029		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.0		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	60		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	84		0.37		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	77		1.5		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	39		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.6		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-13-75.0 Laboratory Sample ID : 271270-010

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Antimony	1.4		0.66		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	4.2		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	110		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.34		0.13		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.65		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	58		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	12		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	19		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	5.2		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.042		0.018		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.52		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	74		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	38		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	44		1.3		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	18		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.7		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-03-02.0 Laboratory Sample ID : 271270-011

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Methylene Chloride	6.1	J	30	1.7	ug/Kg	Dry	0.9242	EPA 8260B	EPA 5035
2-Butanone	49		15	2.0	ug/Kg	Dry	0.9242	EPA 8260B	EPA 5035
Toluene	3.2	J	7.6	1.1	ug/Kg	Dry	0.9242	EPA 8260B	EPA 5035
Antimony	2.2		0.84		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	12		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	73		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.64		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.90		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	89		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	6.9		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	43		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	21		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.10		0.028		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	14		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	51		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	84		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	77		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	39		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.5		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-03-04.0 Laboratory Sample ID : 271270-012

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	130		37	6.2	ug/Kg	Dry	1.031	EPA 8260B	EPA 5035
Methylene Chloride	7.1	J	41	2.3	ug/Kg	Dry	1.136	EPA 8260B	EPA 5035
Carbon Disulfide	2.6	J	10	1.8	ug/Kg	Dry	1.136	EPA 8260B	EPA 5035
2-Butanone	15	J	21	2.8	ug/Kg	Dry	1.136	EPA 8260B	EPA 5035
Antimony	1.9		0.90		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	4.2		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	41		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.52		0.18		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.91		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	89		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	9.4		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	29		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	3.0		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.047		0.028		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.99		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	63		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	70		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	64		1.8		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	45		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-08-02.0 Laboratory Sample ID : 271270-013

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	150		36	6.0	ug/Kg	Dry	1.002	EPA 8260B	EPA 5035
Methylene Chloride	8.2	J	39	2.2	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
2-Butanone	11	J	20	2.6	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
Antimony	2.2		0.86		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	3.5		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	44		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.52		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.1		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	99		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.4		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	21		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	4.5		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.049		0.031		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	1.2		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	63		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	77		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	76		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	45		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.5		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-08-04.0 Laboratory Sample ID : 271270-014

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	140		40	6.6	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
Methylene Chloride	10	J	39	2.2	ug/Kg	Dry	1.050	EPA 8260B	EPA 5035
Carbon Disulfide	3.1	J	9.7	1.7	ug/Kg	Dry	1.050	EPA 8260B	EPA 5035
2-Butanone	14	J	19	2.6	ug/Kg	Dry	1.050	EPA 8260B	EPA 5035
Toluene	7.1	J	9.7	1.4	ug/Kg	Dry	1.050	EPA 8260B	EPA 5035
Antimony	1.6		1.0		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	4.4		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	50		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.57		0.20		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	97		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	9.2		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	20		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	3.7		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.047		0.034		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	1.0		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	65		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	80		0.50		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	75		2.0		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	46		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.8		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-02-02.0 Laboratory Sample ID : 271270-015

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1.7	Y	1.5		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	140		25	4.2	ug/Kg	Dry	0.8475	EPA 8260B	EPA 5035
2-Butanone	13	J	14	1.9	ug/Kg	Dry	0.9597	EPA 8260B	EPA 5035
beta-BHC	34	C	5.1		ug/Kg	Dry	2.000	EPA 8081A	EPA 3550B
Antimony	2.2		0.79		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	7.6		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	48		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.61		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.1		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	94		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.6		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	27		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	6.1		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.069		0.026		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	1.8		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	59		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	73		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	73		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	33		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.3		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-02-04.0 Laboratory Sample ID : 271270-016

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1.7	Y	1.6		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	13	Y	7.8		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	120		34	5.6	ug/Kg	Dry	1.082	EPA 8260B	EPA 5035
Carbon Disulfide	2.5	J	11	1.9	ug/Kg	Dry	1.397	EPA 8260B	EPA 5035
2-Butanone	28		22	2.9	ug/Kg	Dry	1.397	EPA 8260B	EPA 5035
Antimony	3.1		0.84		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	7.0		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	83		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.71		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.3		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	35		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	19		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.13		0.024		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.8		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	71		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	84		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	110		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	36		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-01-02.0 Laboratory Sample ID : 271270-017

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	3.6	Y	1.4		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	9.3	Y	7.2		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	660	J	2,900	480	ug/Kg	Dry	100.1	EPA 8260B	EPA 5035
Carbon Disulfide	1.6	J	7.2	1.3	ug/Kg	Dry	0.9960	EPA 8260B	EPA 5035
2-Butanone	29		14	1.9	ug/Kg	Dry	0.9960	EPA 8260B	EPA 5035
Antimony	3.0		0.72		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.7		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	45		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.46		0.14		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.0		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	100		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.6		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	27		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	4.9		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.16		0.023		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.8		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	64		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	94		0.36		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	69		1.4		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	31		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-01-04.0 Laboratory Sample ID : 271270-018

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	130		37	6.1	ug/Kg	Dry	1.408	EPA 8260B	EPA 5035
2-Butanone	17		14	1.9	ug/Kg	Dry	1.075	EPA 8260B	EPA 5035
Antimony	2.1		0.66		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	4.5		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	34		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.50		0.13		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.99		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	69		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	12		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	23		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	5.8		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.16		0.023		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.77		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	61		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	53		0.33		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	52		1.3		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	24		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.4		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-10-02.0 Laboratory Sample ID : 271270-019

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	94		32	5.2	ug/Kg	Dry	0.9804	EPA 8260B	EPA 5035
Carbon Disulfide	12		7.9	1.4	ug/Kg	Dry	0.9804	EPA 8260B	EPA 5035
2-Butanone	7.4	J	16	2.1	ug/Kg	Dry	0.9804	EPA 8260B	EPA 5035
beta-BHC	3.5		2.7		ug/Kg	Dry	1.000	EPA 8081A	EPA 3550B
Antimony	2.4		0.79		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	5.3		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	51		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.48		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.1		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	110		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.7		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	32		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	8.5		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.035		0.027		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	2.5		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	60		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	81		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	75		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	38		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-09-01.0 Laboratory Sample ID : 271270-020

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	100		30	5.0	ug/Kg	Dry	0.8757	EPA 8260B	EPA 5035
2-Butanone	16		15	2.0	ug/Kg	Dry	0.8757	EPA 8260B	EPA 5035
Antimony	1.5		0.87		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	7.1		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	26		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.39		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.3		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	84		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	8.5		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	44		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	2.7		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.050		0.029		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	7.8		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	51		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	49		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	110		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	42		1		%	As Recd	1.000	EPA CLP	METHOD
pH	6.0		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-09-04.5 Laboratory Sample ID : 271270-021

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	150		28	4.7	ug/Kg	Dry	0.7246	EPA 8260B	EPA 5035
Carbon Disulfide	2.6	J	7.1	1.2	ug/Kg	Dry	0.7246	EPA 8260B	EPA 5035
2-Butanone	23		14	1.9	ug/Kg	Dry	0.7246	EPA 8260B	EPA 5035
Antimony	3.0		0.92		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	3.5		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	39		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.61		0.18		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.4		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	83		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	15		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	24		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.5		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.053		0.030		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Nickel	86		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	62		0.46		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	85		1.8		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	49		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.6		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-12-15.0 Laboratory Sample ID : 271270-022

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	95		39	6.5	ug/Kg	Dry	1.002	EPA 8260B	EPA 5035
Carbon Disulfide	14		9.8	1.7	ug/Kg	Dry	1.002	EPA 8260B	EPA 5035
2-Butanone	14	J	20	2.6	ug/Kg	Dry	1.002	EPA 8260B	EPA 5035
Antimony	3.1		0.91		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	7.2		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	43		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.58		0.18		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.3		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	81		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	17		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	31		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	8.3		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.066		0.031		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.70		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	87		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	62		0.45		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	84		1.8		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	49		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-12-25.0 Laboratory Sample ID : 271270-023

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	73		36	6.0	ug/Kg	Dry	1.053	EPA 8260B	EPA 5035
Carbon Disulfide	8.1	J	9.1	1.6	ug/Kg	Dry	1.053	EPA 8260B	EPA 5035
2-Butanone	12	J	18	2.4	ug/Kg	Dry	1.053	EPA 8260B	EPA 5035
Antimony	2.6		0.79		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	7.0		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	44		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.52		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	75		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	15		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	31		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.5		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.065		0.027		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.63		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	80		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	58		0.40		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	75		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	42		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.1		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-11-15.0 Laboratory Sample ID : 271270-024

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	76		36	6.0	ug/Kg	Dry	0.9747	EPA 8260B	EPA 5035
Carbon Disulfide	11		9.0	0.86	ug/Kg	Dry	0.9747	EPA 8260B	EPA 5035
2-Butanone	15	J	18	2.6	ug/Kg	Dry	0.9747	EPA 8260B	EPA 5035
Antimony	1.5		0.84		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.8		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	40		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.54		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	77		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	16		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	30		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.5		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.054		0.029		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.67		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	81		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	59		0.42		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	77		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	46		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.0		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-11-25.0 Laboratory Sample ID : 271270-025

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Motor Oil C24-C36	9.0	Y	8.6		mg/Kg	Dry	1.000	EPA 8015B	EPA 3550B
Acetone	74		32	5.2	ug/Kg	Dry	0.9225	EPA 8260B	EPA 5035
Methylene Chloride	7.3	J	32	1.8	ug/Kg	Dry	0.9225	EPA 8260B	EPA 5035
Carbon Disulfide	2.8	J	8.0	1.4	ug/Kg	Dry	0.9225	EPA 8260B	EPA 5035
2-Butanone	8.9	J	16	2.1	ug/Kg	Dry	0.9225	EPA 8260B	EPA 5035
Toluene	3.4	J	8.0	1.1	ug/Kg	Dry	0.9225	EPA 8260B	EPA 5035
Antimony	2.6		0.78		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	8.6		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	38		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.48		0.16		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	68		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	15		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	28		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.7		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.051		0.027		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.74		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	74		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	55		0.39		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	70		1.6		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	42		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.0		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

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Client Sample ID : IE-13-15.0 Laboratory Sample ID : 271270-026

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	79		47	7.8	ug/Kg	Dry	1.250	EPA 8260B	EPA 5035
Methylene Chloride	11	J	47	2.6	ug/Kg	Dry	1.250	EPA 8260B	EPA 5035
Carbon Disulfide	5.7	J	12	2.1	ug/Kg	Dry	1.250	EPA 8260B	EPA 5035
2-Butanone	13	J	24	3.2	ug/Kg	Dry	1.250	EPA 8260B	EPA 5035
Antimony	3.1		0.86		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.9		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	38		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.54		0.17		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	77		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	15		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	28		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.1		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.048		0.029		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.49		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	79		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	59		0.43		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	77		1.7		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	47		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.0		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-13-30.0 Laboratory Sample ID : 271270-027

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	120		54	9.0	ug/Kg	Dry	1.466	EPA 8260B	EPA 5035
Methylene Chloride	13	J	54	3.0	ug/Kg	Dry	1.466	EPA 8260B	EPA 5035
Carbon Disulfide	2.9	J	14	2.4	ug/Kg	Dry	1.466	EPA 8260B	EPA 5035
2-Butanone	10	J	27	3.6	ug/Kg	Dry	1.466	EPA 8260B	EPA 5035
Toluene	6.8	J	14	1.9	ug/Kg	Dry	1.466	EPA 8260B	EPA 5035
Antimony	2.7		0.88		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	5.2		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	41		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.56		0.18		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	1.2		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	80		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	16		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	30		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	7.4		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.056		0.028		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Nickel	83		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	63		0.44		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	82		1.8		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	46		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.0		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : IE-13-45.0 Laboratory Sample ID : 271270-028

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	28		19	3.1	ug/Kg	Dry	0.7485	EPA 8260B	EPA 5035
Methylene Chloride	2.9	J	19	1.1	ug/Kg	Dry	0.7485	EPA 8260B	EPA 5035
Toluene	1.9	J	4.7	0.67	ug/Kg	Dry	0.7485	EPA 8260B	EPA 5035
Antimony	2.2		0.58		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	3.5		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	150		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.69		0.12		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.92		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	83		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	20		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	41		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	9.7		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.10		0.019		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.84		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	130		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	54		0.29		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	92		1.2		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	21		1		%	As Recd	1.000	EPA CLP	METHOD
pH	8.7		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

Client Sample ID : IE-13-60.0 Laboratory Sample ID : 271270-029

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Acetone	48		22	3.7	ug/Kg	Dry	0.8319	EPA 8260B	EPA 5035
Antimony	2.4		0.69		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Arsenic	6.9		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Barium	110		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Beryllium	0.51		0.14		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cadmium	0.96		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Chromium	73		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Cobalt	16		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Copper	36		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Lead	8.3		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Mercury	0.085		0.021		mg/Kg	Dry	1.000	EPA 7471A	METHOD
Molybdenum	0.65		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Nickel	100		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Vanadium	46		0.34		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Zinc	75		1.4		mg/Kg	Dry	1.000	EPA 6010B	EPA 3050B
Moisture, Percent	25		1		%	As Recd	1.000	EPA CLP	METHOD
pH	7.3		1.0		SU	As Recd	1.000	EPA 9045D	METHOD

C = Presence confirmed, but RPD between columns exceeds 40%

J = Estimated value

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-10-04.0	Moisture:	34%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-001	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.15

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	91	78-138

Field ID:	IE-04-02.0	Moisture:	44%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-002	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.55

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Field ID:	IE-04-04.0	Moisture:	41%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-003	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.54

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	78-138

Field ID:	IE-07-02.0	Moisture:	43%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-004	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-07-04.0	Moisture:	42%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-005	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.32

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	78-138

Field ID:	IE-06-02.0	Moisture:	32%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-006	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.51

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	78-138

Field ID:	IE-06-04.0	Moisture:	39%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-007	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

Field ID:	IE-05-02.0	Moisture:	41%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-008	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.40

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-05-04.0	Moisture:	39%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-009	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.46

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	78-138

Field ID:	IE-13-75.0	Moisture:	18%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-010	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.21

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	78-138

Field ID:	IE-03-02.0	Moisture:	39%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-011	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.32

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	78-138

Field ID:	IE-03-04.0	Moisture:	45%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-012	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.38

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-08-02.0	Moisture:	45%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-013	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.37

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	78-138

Field ID:	IE-08-04.0	Moisture:	46%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-014	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.48

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Field ID:	IE-02-02.0	Moisture:	33%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-015	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.34

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	78-138

Field ID:	IE-02-04.0	Moisture:	36%
Type:	SAMPLE	Batch#:	229044
Lab ID:	271270-016	Analyzed:	11/05/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.35

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-01-02.0	Moisture:	31%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-017	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.26

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	78-138

Field ID:	IE-01-04.0	Moisture:	24%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-018	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

Field ID:	IE-10-02.0	Moisture:	38%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-019	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.36

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	114	78-138

Field ID:	IE-09-01.0	Moisture:	42%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-020	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	111	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-09-04.5	Moisture:	49%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-021	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.44

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	78-138

Field ID:	IE-12-15.0	Moisture:	49%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-022	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.51

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	115	78-138

Field ID:	IE-12-25.0	Moisture:	42%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-023	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.32

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	86	78-138

Field ID:	IE-11-15.0	Moisture:	46%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-024	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.38

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-11-25.0	Moisture:	42%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-025	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	78-138

Field ID:	IE-13-15.0	Moisture:	47%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-026	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.34

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

Field ID:	IE-13-30.0	Moisture:	46%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-027	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.44

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	93	78-138

Field ID:	IE-13-45.0	Moisture:	21%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-028	Analyzed:	11/05/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.21

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-13-60.0	Moisture:	25%
Type:	SAMPLE	Batch#:	229065
Lab ID:	271270-029	Analyzed:	11/05/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	120	78-138

Type:	BLANK	Batch#:	229044
Lab ID:	QC811176	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	78-138

Type:	BLANK	Batch#:	229065
Lab ID:	QC811254	Analyzed:	11/04/15

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811175	Batch#:	229044
Matrix:	Soil	Analyzed:	11/04/15
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.028	103	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5030B
Project#:	15-1313A	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	271283-001	Batch#:	229044
Matrix:	Soil	Sampled:	11/03/15
Units:	mg/Kg	Received:	11/04/15
Basis:	as received	Analyzed:	11/04/15

Type: MS Lab ID: QC811177

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.07375	10.64	9.091	85	50-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	78-138

Type: MSD Lab ID: QC811178

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.615	8.106	84	50-120	1	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	78-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811253	Batch#:	229065
Matrix:	Soil	Analyzed:	11/04/15
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.051	105	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	78-138

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	271290-001	Batch#:	229065
Matrix:	Soil	Sampled:	11/04/15
Units:	mg/Kg	Received:	11/04/15
Basis:	as received	Analyzed:	11/05/15

Type: MS Lab ID: QC811313

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.08822	10.42	8.873	84	50-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	112	78-138

Type: MSD Lab ID: QC811314

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.31	7.951	76	50-120	10	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	111	78-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-10-04.0	Batch#:	229157
Type:	SAMPLE	Prepared:	11/06/15
Lab ID:	271270-001	Analyzed:	11/08/15
Moisture:	34%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.5
Motor Oil C24-C36	9.6 Y	7.6

Surrogate	%REC	Limits
o-Terphenyl	98	59-140

Field ID:	IE-04-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-002	Analyzed:	11/09/15
Moisture:	44%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.8
Motor Oil C24-C36	ND	9.0

Surrogate	%REC	Limits
o-Terphenyl	116	59-140

Field ID:	IE-04-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-003	Analyzed:	11/09/15
Moisture:	41%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	ND	8.5

Surrogate	%REC	Limits
o-Terphenyl	86	59-140

Field ID:	IE-07-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-004	Analyzed:	11/09/15
Moisture:	43%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.8
Motor Oil C24-C36	ND	8.8

Surrogate	%REC	Limits
o-Terphenyl	94	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-07-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-005	Analyzed:	11/09/15
Moisture:	42%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	ND	8.7

Surrogate	%REC	Limits
o-Terphenyl	96	59-140

Field ID:	IE-06-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-006	Analyzed:	11/09/15
Moisture:	32%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	1.9 Y	1.5
Motor Oil C24-C36	9.6 Y	7.4

Surrogate	%REC	Limits
o-Terphenyl	109	59-140

Field ID:	IE-06-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-007	Analyzed:	11/09/15
Moisture:	39%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.6
Motor Oil C24-C36	ND	8.2

Surrogate	%REC	Limits
o-Terphenyl	94	59-140

Field ID:	IE-05-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-008	Analyzed:	11/09/15
Moisture:	41%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	ND	8.6

Surrogate	%REC	Limits
o-Terphenyl	91	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-05-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-009	Analyzed:	11/10/15
Moisture:	39%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.6
Motor Oil C24-C36	ND	8.1

Surrogate	%REC	Limits
o-Terphenyl	89	59-140

Field ID:	IE-13-75.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-010	Analyzed:	11/10/15
Moisture:	18%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.2
Motor Oil C24-C36	ND	6.0

Surrogate	%REC	Limits
o-Terphenyl	78	59-140

Field ID:	IE-03-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-011	Analyzed:	11/10/15
Moisture:	39%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.6
Motor Oil C24-C36	ND	8.2

Surrogate	%REC	Limits
o-Terphenyl	90	59-140

Field ID:	IE-03-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-012	Analyzed:	11/10/15
Moisture:	45%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.8
Motor Oil C24-C36	ND	9.1

Surrogate	%REC	Limits
o-Terphenyl	105	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-08-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-013	Analyzed:	11/11/15
Moisture:	45%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.8
Motor Oil C24-C36	ND	9.1

Surrogate	%REC	Limits
o-Terphenyl	106	59-140

Field ID:	IE-08-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-014	Analyzed:	11/10/15
Moisture:	46%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.8
Motor Oil C24-C36	ND	9.2

Surrogate	%REC	Limits
o-Terphenyl	102	59-140

Field ID:	IE-02-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-015	Analyzed:	11/10/15
Moisture:	33%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	1.7 Y	1.5
Motor Oil C24-C36	ND	7.4

Surrogate	%REC	Limits
o-Terphenyl	106	59-140

Field ID:	IE-02-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-016	Analyzed:	11/10/15
Moisture:	36%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	1.7 Y	1.6
Motor Oil C24-C36	13 Y	7.8

Surrogate	%REC	Limits
o-Terphenyl	95	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-01-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-017	Analyzed:	11/10/15
Moisture:	31%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	3.6 Y	1.4
Motor Oil C24-C36	9.3 Y	7.2

Surrogate	%REC	Limits
o-Terphenyl	97	59-140

Field ID:	IE-01-04.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-018	Analyzed:	11/10/15
Moisture:	24%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.3
Motor Oil C24-C36	ND	6.5

Surrogate	%REC	Limits
o-Terphenyl	99	59-140

Field ID:	IE-10-02.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-019	Analyzed:	11/10/15
Moisture:	38%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.6
Motor Oil C24-C36	ND	8.0

Surrogate	%REC	Limits
o-Terphenyl	105	59-140

Field ID:	IE-09-01.0	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-020	Analyzed:	11/10/15
Moisture:	42%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	ND	8.7

Surrogate	%REC	Limits
o-Terphenyl	108	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-09-04.5	Batch#:	229214
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-021	Analyzed:	11/10/15
Moisture:	49%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	2.0
Motor Oil C24-C36	ND	9.8

Surrogate	%REC	Limits
o-Terphenyl	93	59-140

Field ID:	IE-12-15.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-022	Analyzed:	11/10/15
Moisture:	49%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	2.0
Motor Oil C24-C36	ND	9.8

Surrogate	%REC	Limits
o-Terphenyl	94	59-140

Field ID:	IE-12-25.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-023	Analyzed:	11/10/15
Moisture:	42%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	ND	8.7

Surrogate	%REC	Limits
o-Terphenyl	98	59-140

Field ID:	IE-11-15.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-024	Analyzed:	11/10/15
Moisture:	46%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.9
Motor Oil C24-C36	ND	9.3

Surrogate	%REC	Limits
o-Terphenyl	91	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-11-25.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-025	Analyzed:	11/10/15
Moisture:	42%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.7
Motor Oil C24-C36	9.0 Y	8.6

Surrogate	%REC	Limits
o-Terphenyl	92	59-140

Field ID:	IE-13-15.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-026	Analyzed:	11/11/15
Moisture:	47%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.9
Motor Oil C24-C36	ND	9.4

Surrogate	%REC	Limits
o-Terphenyl	95	59-140

Field ID:	IE-13-30.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-027	Analyzed:	11/11/15
Moisture:	46%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.9
Motor Oil C24-C36	ND	9.3

Surrogate	%REC	Limits
o-Terphenyl	95	59-140

Field ID:	IE-13-45.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-028	Analyzed:	11/11/15
Moisture:	21%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.3
Motor Oil C24-C36	ND	6.4

Surrogate	%REC	Limits
o-Terphenyl	103	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-13-60.0	Batch#:	229244
Type:	SAMPLE	Prepared:	11/09/15
Lab ID:	271270-029	Analyzed:	11/11/15
Moisture:	25%	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.3
Motor Oil C24-C36	ND	6.7

Surrogate	%REC	Limits
o-Terphenyl	106	59-140

Type:	BLANK	Prepared:	11/06/15
Lab ID:	QC811631	Analyzed:	11/07/15
Batch#:	229157	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	104	59-140

Type:	BLANK	Prepared:	11/09/15
Lab ID:	QC811857	Analyzed:	11/10/15
Batch#:	229214	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	103	59-140

Type:	BLANK	Prepared:	11/09/15
Lab ID:	QC811981	Analyzed:	11/10/15
Batch#:	229244	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	115	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811632	Batch#:	229157
Matrix:	Soil	Prepared:	11/06/15
Units:	mg/Kg	Analyzed:	11/07/15

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.36	43.22	86	58-137

Surrogate	%REC	Limits
o-Terphenyl	89	59-140

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	229157
MSS Lab ID:	271034-003	Sampled:	10/26/15
Matrix:	Soil	Received:	10/28/15
Units:	mg/Kg	Prepared:	11/06/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Type: MS Moisture: 6%
Lab ID: QC811633

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	8.411	53.44	58.08	93	46-154

Surrogate	%REC	Limits
o-Terphenyl	111	59-140

Type: MSD Moisture: 6%
Lab ID: QC811634

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	53.64	60.12	96	46-154	3	50

Surrogate	%REC	Limits
o-Terphenyl	111	59-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811858	Batch#:	229214
Matrix:	Soil	Prepared:	11/09/15
Units:	mg/Kg	Analyzed:	11/10/15

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.16	49.10	98	58-137

Surrogate	%REC	Limits
o-Terphenyl	105	59-140

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Field ID:	IE-08-02.0	Batch#:	229214
MSS Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/12/15
Diln Fac:	1.000		

Type:	MS	Moisture:	45%
Lab ID:	QC811859	Cleanup Method:	EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	1.020	90.17	87.61	96	46-154

Surrogate	%REC	Limits
o-Terphenyl	107	59-140

Type:	MSD	Moisture:	45%
Lab ID:	QC811860	Cleanup Method:	EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	91.13	95.55	104	46-154	8	50

Surrogate	%REC	Limits
o-Terphenyl	118	59-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811982	Batch#:	229244
Matrix:	Soil	Prepared:	11/09/15
Units:	mg/Kg	Analyzed:	11/09/15

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.85	42.46	85	58-137

Surrogate	%REC	Limits
o-Terphenyl	92	59-140

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	229244
MSS Lab ID:	271375-003	Sampled:	11/06/15
Matrix:	Soil	Received:	11/06/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	as received	Analyzed:	11/12/15
Diln Fac:	5.000		

Type: MS Lab ID: QC811983

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	26.04	50.48	71.93	91	46-154

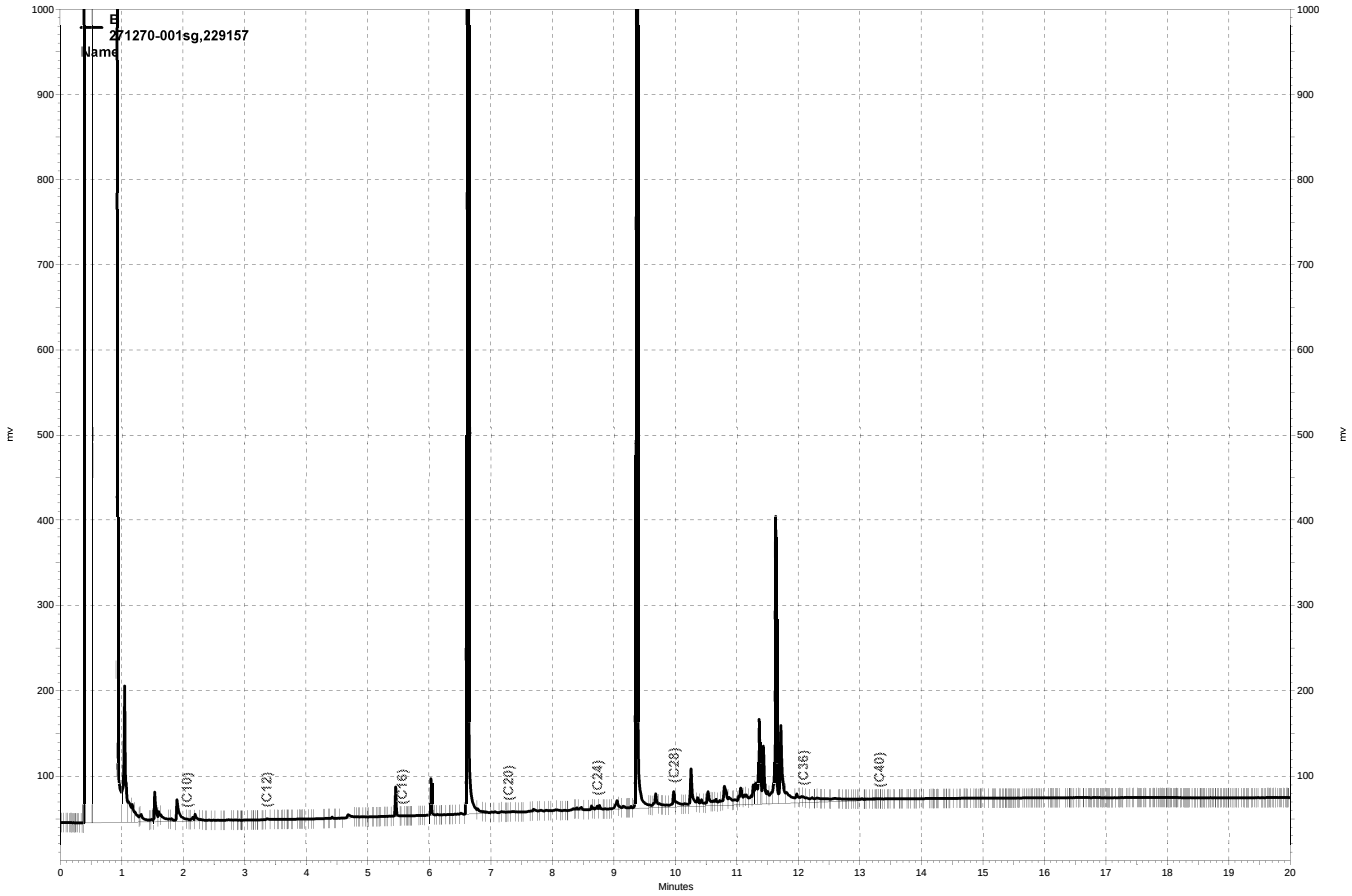
Surrogate	%REC	Limits
o-Terphenyl	97	59-140

Type: MSD Lab ID: QC811984

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.88	68.49	85	46-154	4	50

Surrogate	%REC	Limits
o-Terphenyl	81	59-140

RPD= Relative Percent Difference



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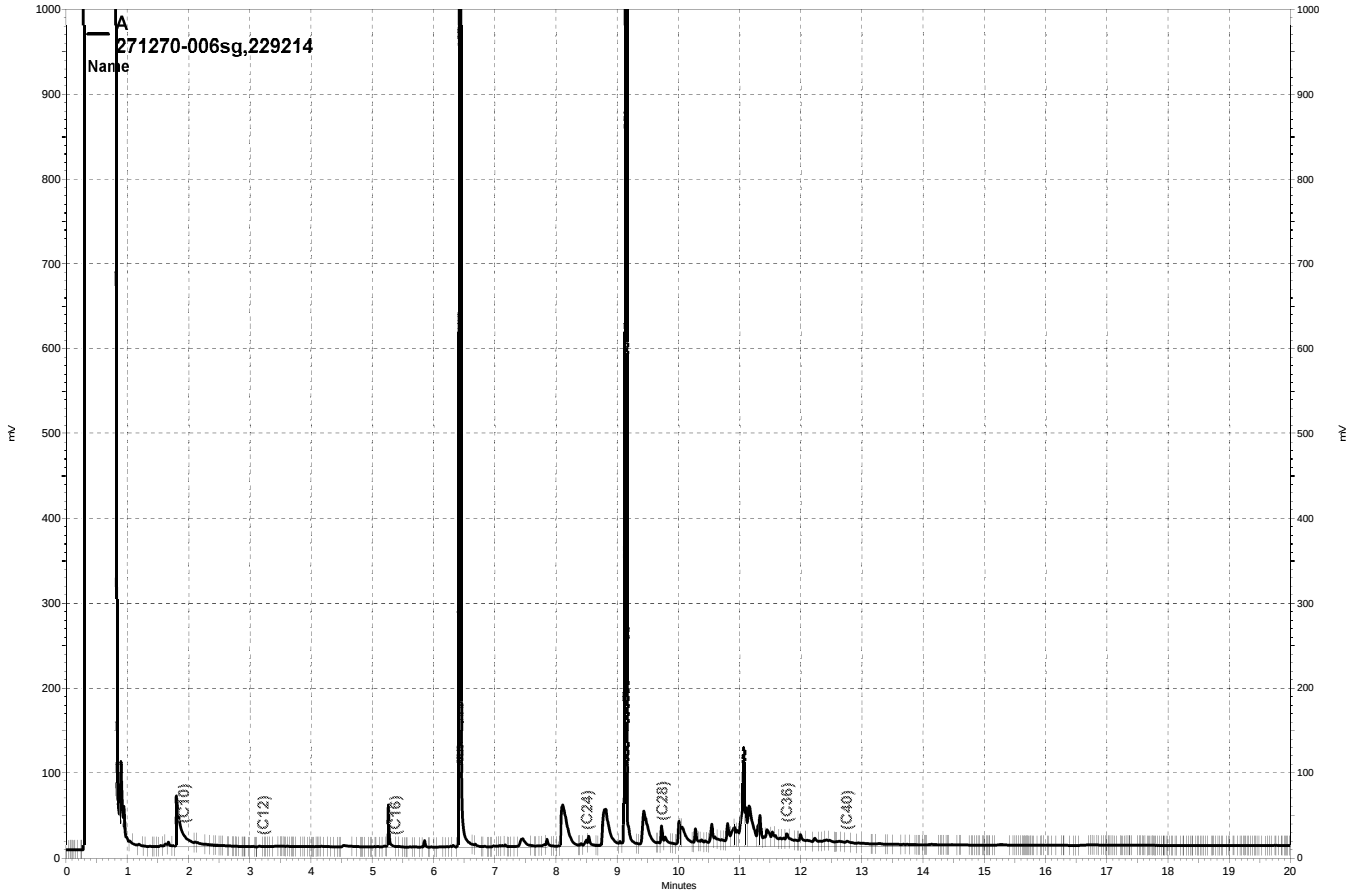

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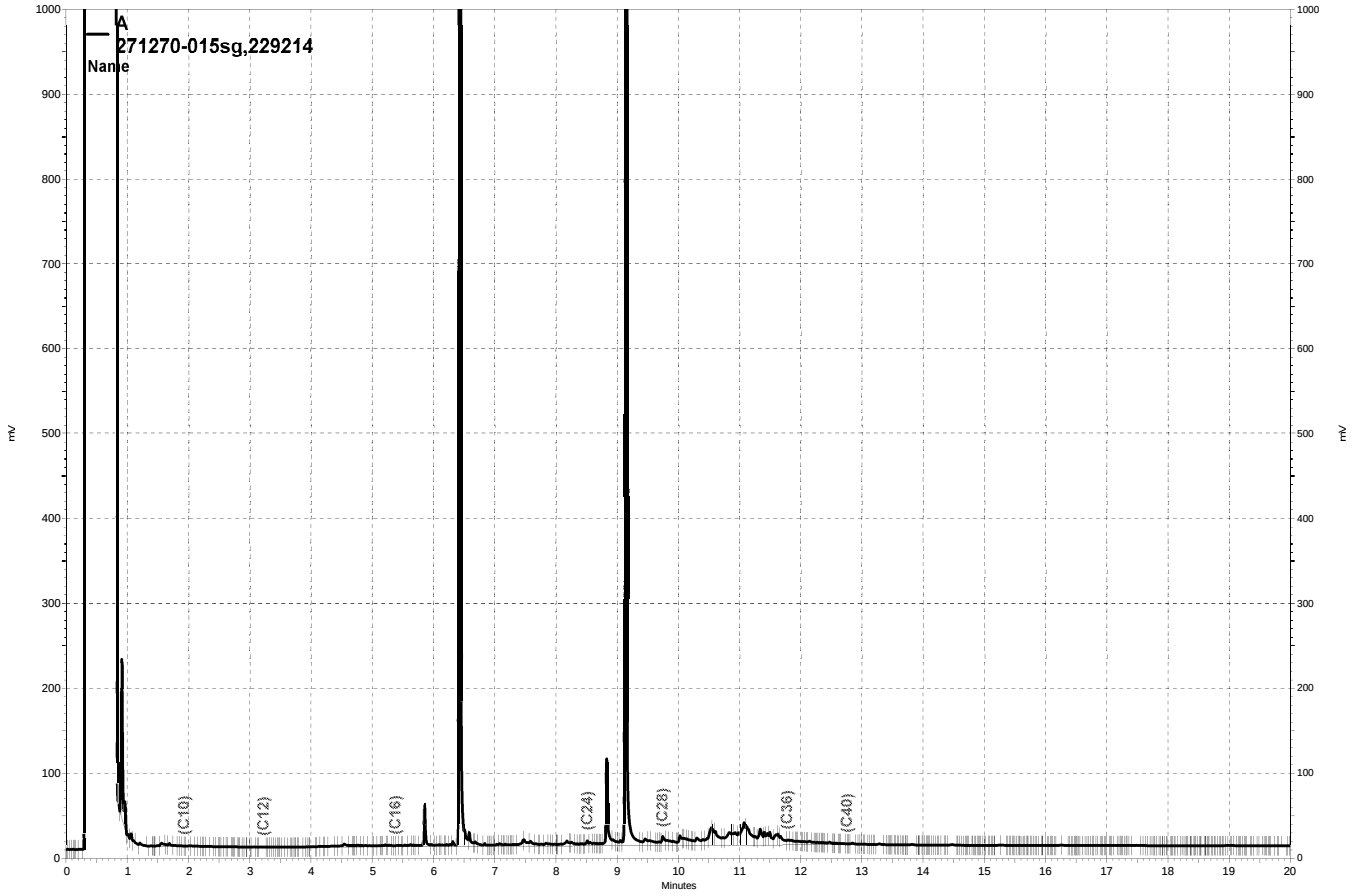

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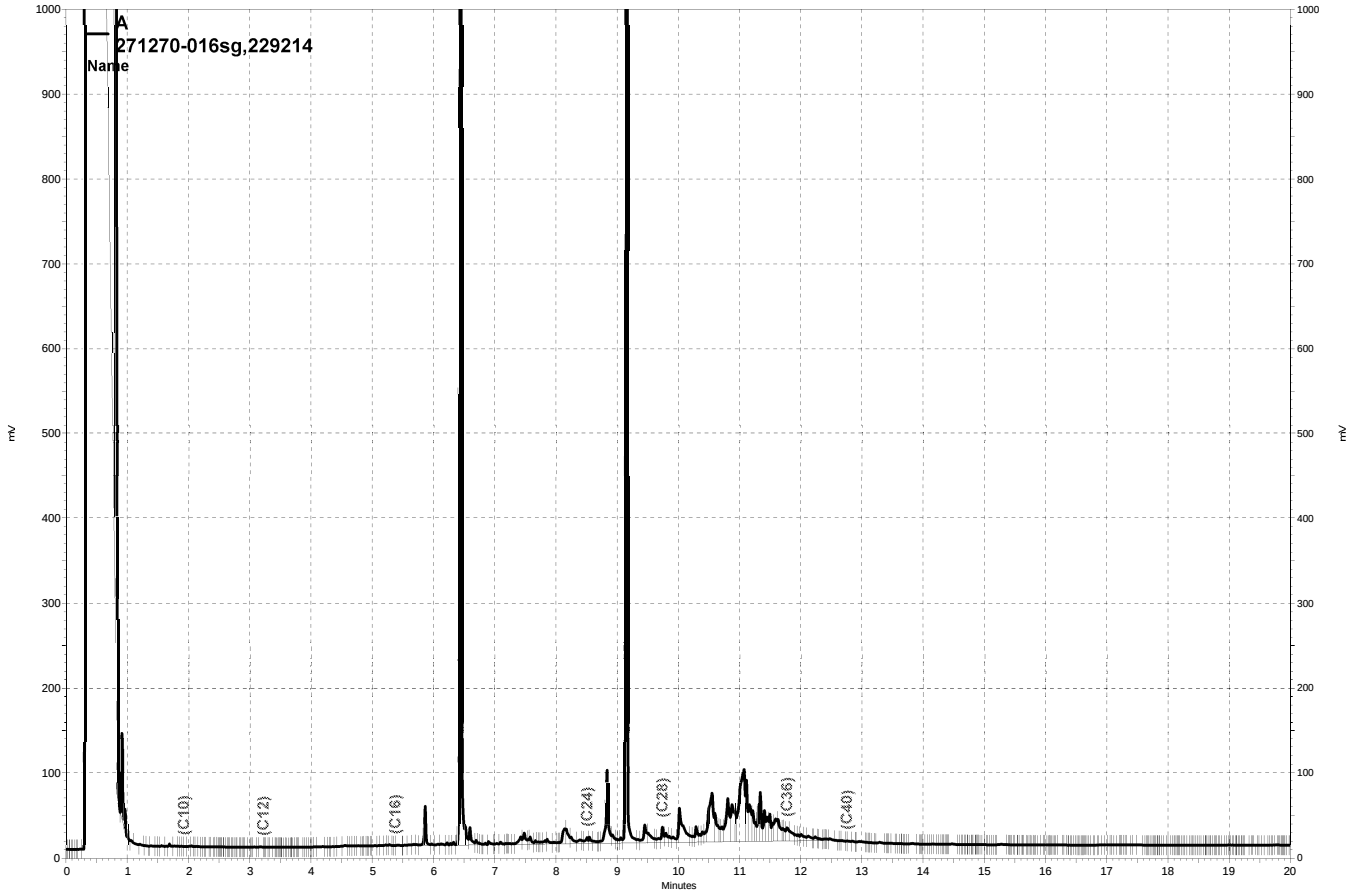

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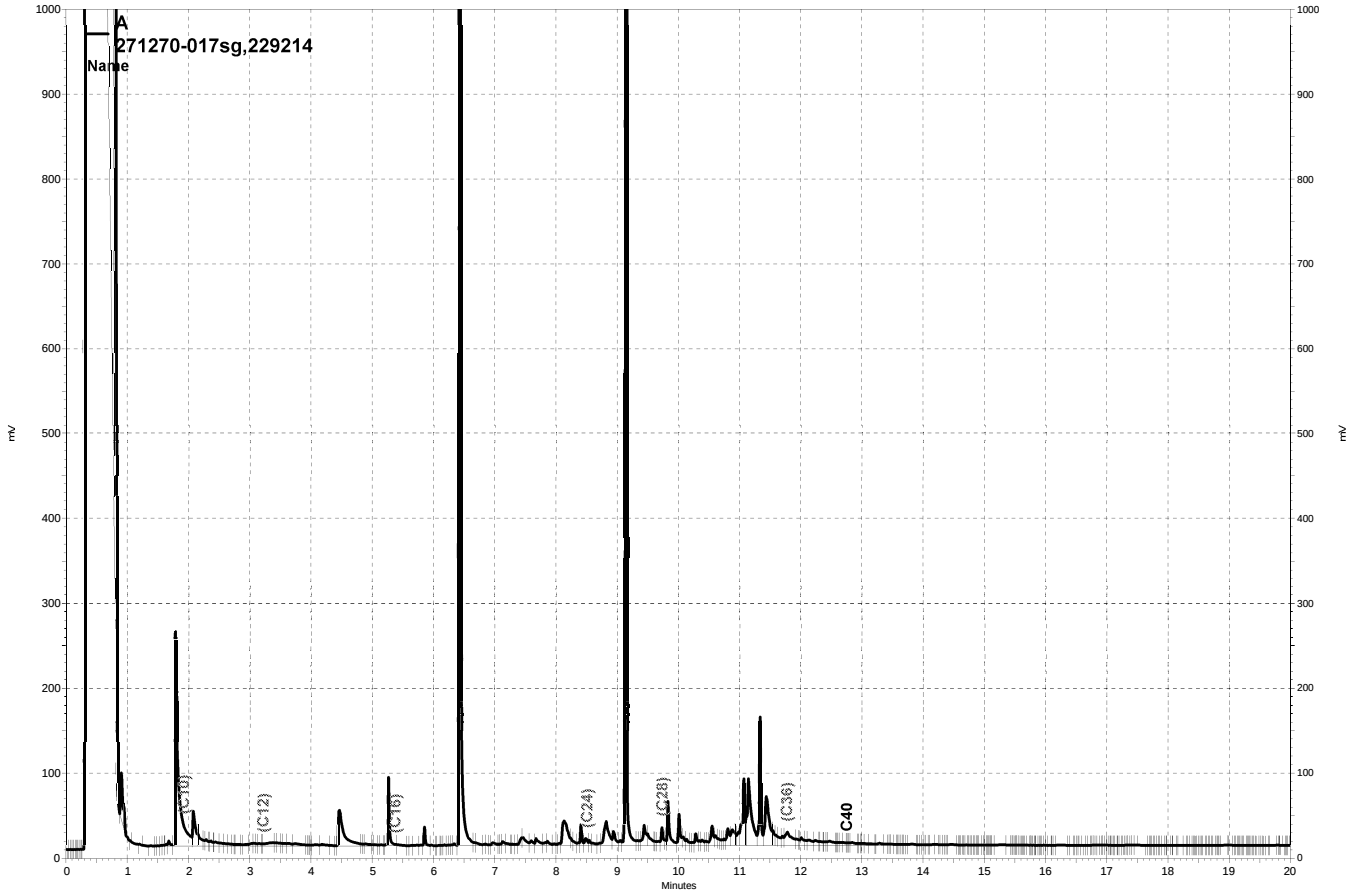

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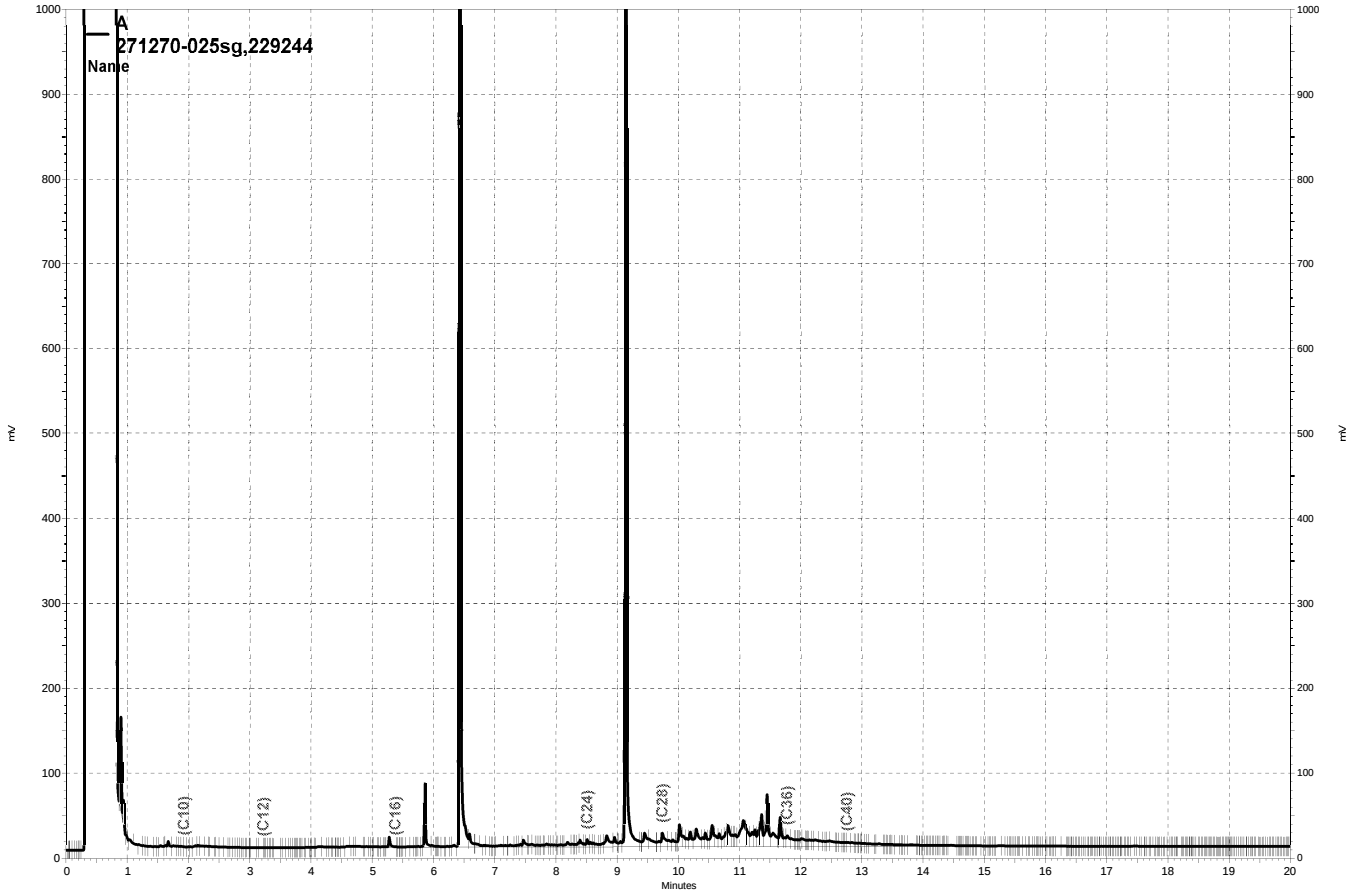

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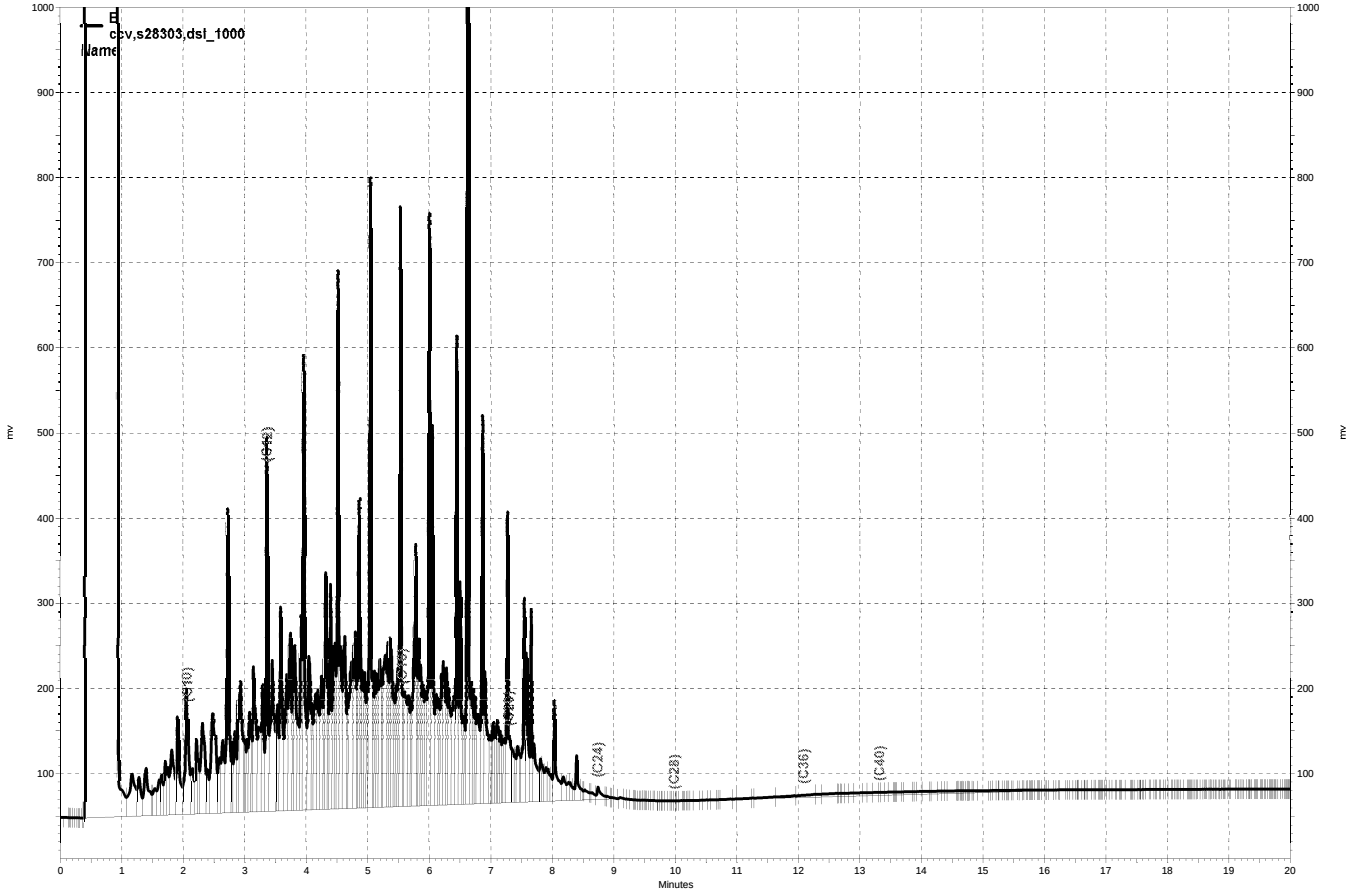

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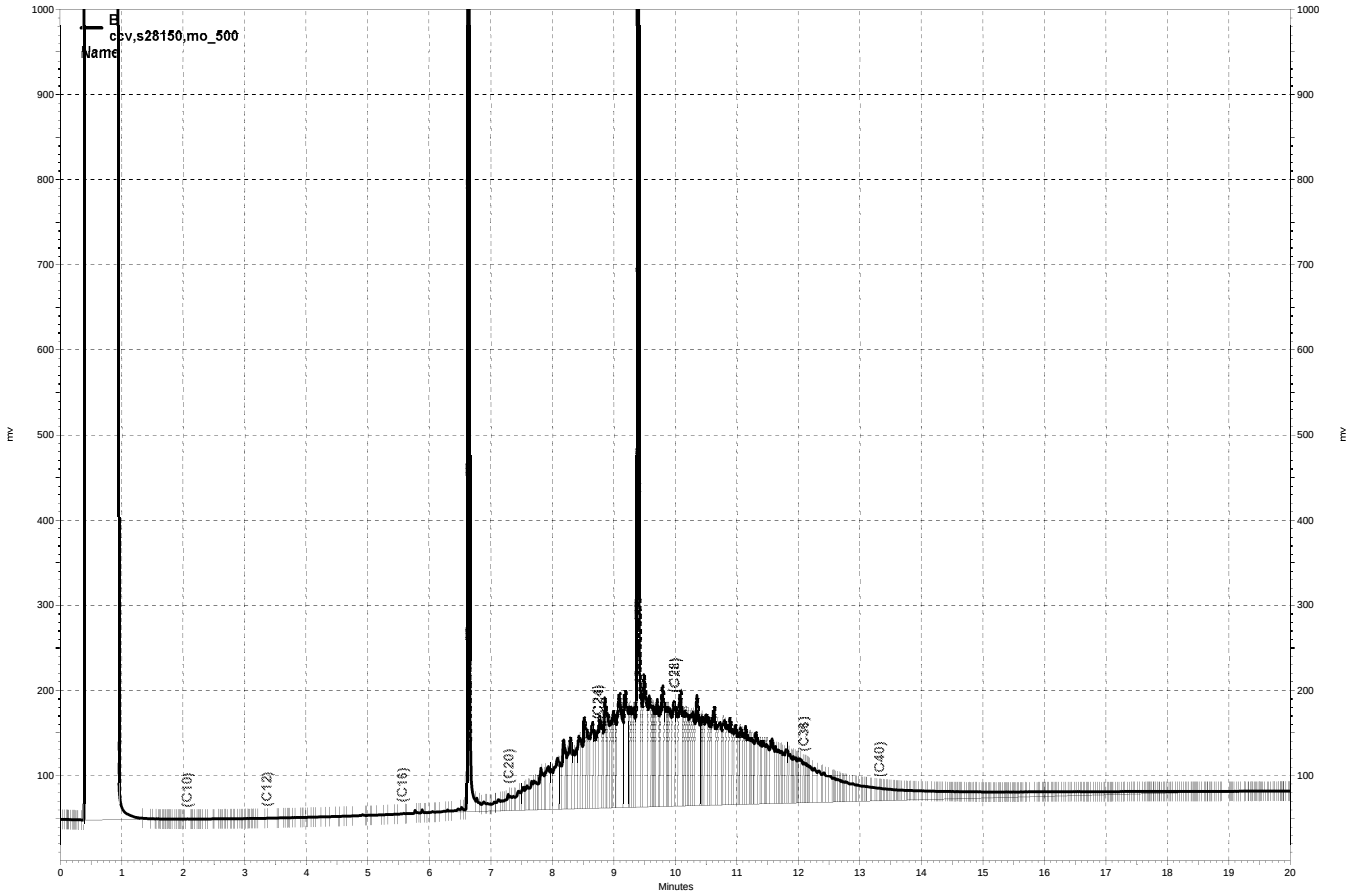

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-10-04.0	Diln Fac:	0.5252
Lab ID:	271270-001	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 34%

Analyte	Result	RL	MDL
Freon 12	ND	8.0	0.37
Chloromethane	ND	8.0	0.40
Vinyl Chloride	ND	8.0	0.37
Bromomethane	ND	8.0	0.85
Chloroethane	ND	8.0	0.60
Trichlorofluoromethane	ND	4.0	0.20
Acetone	76	16	2.6
Freon 113	ND	4.0	0.36
1,1-Dichloroethene	ND	4.0	0.35
Methylene Chloride	ND	16	0.36
Carbon Disulfide	0.88 J	4.0	0.38
MTBE	ND	4.0	0.12
trans-1,2-Dichloroethene	ND	4.0	0.49
Vinyl Acetate	ND	40	0.59
1,1-Dichloroethane	ND	4.0	0.29
2-Butanone	16	8.0	1.1
cis-1,2-Dichloroethene	ND	4.0	0.24
2,2-Dichloropropane	ND	4.0	0.29
Chloroform	ND	4.0	0.24
Bromochloromethane	ND	4.0	0.42
1,1,1-Trichloroethane	ND	4.0	0.32
1,1-Dichloropropene	ND	4.0	0.20
Carbon Tetrachloride	ND	4.0	0.39
1,2-Dichloroethane	ND	4.0	0.27
Benzene	ND	4.0	0.35
Trichloroethene	ND	4.0	0.33
1,2-Dichloropropane	ND	4.0	0.18
Bromodichloromethane	ND	4.0	0.19
Dibromomethane	ND	4.0	0.52
4-Methyl-2-Pentanone	ND	8.0	0.38
cis-1,3-Dichloropropene	ND	4.0	0.23
Toluene	ND	4.0	0.25
trans-1,3-Dichloropropene	ND	4.0	0.19
1,1,2-Trichloroethane	ND	4.0	0.30
2-Hexanone	ND	8.0	0.89
1,3-Dichloropropane	ND	4.0	0.17
Tetrachloroethene	ND	4.0	0.19
Dibromochloromethane	ND	4.0	0.22
1,2-Dibromoethane	ND	4.0	0.17
Chlorobenzene	ND	4.0	0.31
1,1,1,2-Tetrachloroethane	ND	4.0	0.22
Ethylbenzene	ND	4.0	0.30
m,p-Xylenes	ND	4.0	0.72
o-Xylene	ND	4.0	0.22
Styrene	ND	4.0	0.23
Bromoform	ND	4.0	0.37
Isopropylbenzene	ND	4.0	0.24
1,1,2,2-Tetrachloroethane	ND	4.0	0.34
1,2,3-Trichloropropane	ND	4.0	0.20
Propylbenzene	ND	4.0	0.25

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-10-04.0	Dil'n Fac:	0.5252
Lab ID:	271270-001	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	4.0	0.34
1,3,5-Trimethylbenzene	ND	4.0	0.25
2-Chlorotoluene	ND	4.0	0.31
4-Chlorotoluene	ND	4.0	0.37
tert-Butylbenzene	ND	4.0	0.31
1,2,4-Trimethylbenzene	ND	4.0	0.22
sec-Butylbenzene	ND	4.0	0.20
para-Isopropyl Toluene	ND	4.0	0.28
1,3-Dichlorobenzene	ND	4.0	0.34
1,4-Dichlorobenzene	ND	4.0	0.31
n-Butylbenzene	ND	4.0	0.29
1,2-Dichlorobenzene	ND	4.0	0.22
1,2-Dibromo-3-Chloropropane	ND	4.0	0.81
1,2,4-Trichlorobenzene	ND	4.0	0.38
Hexachlorobutadiene	ND	4.0	0.52
Naphthalene	ND	4.0	0.84
1,2,3-Trichlorobenzene	ND	4.0	0.26

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	106	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-04-02.0	Dil'n Fac:	1.538
Lab ID:	271270-002	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 44%

Analyte	Result	RL	MDL
Freon 12	ND	27	1.3
Chloromethane	ND	27	1.4
Vinyl Chloride	ND	27	1.3
Bromomethane	ND	27	2.9
Chloroethane	ND	27	2.1
Trichlorofluoromethane	ND	14	0.70
Acetone	140	55	9.1
Freon 113	ND	14	1.2
1,1-Dichloroethene	ND	14	1.2
Methylene Chloride	25 J	55	1.2
Carbon Disulfide	4.5 J	14	1.3
MTBE	ND	14	0.42
trans-1,2-Dichloroethene	ND	14	1.7
Vinyl Acetate	ND	140	2.0
1,1-Dichloroethane	ND	14	1.0
2-Butanone	20 J	27	3.9
cis-1,2-Dichloroethene	ND	14	0.82
2,2-Dichloropropane	ND	14	0.99
Chloroform	ND	14	0.85
Bromochloromethane	ND	14	1.5
1,1,1-Trichloroethane	ND	14	1.1
1,1-Dichloropropene	ND	14	0.69
Carbon Tetrachloride	ND	14	1.3
1,2-Dichloroethane	ND	14	0.94
Benzene	ND	14	1.2
Trichloroethene	ND	14	1.2
1,2-Dichloropropane	ND	14	0.63
Bromodichloromethane	ND	14	0.67
Dibromomethane	ND	14	1.8
4-Methyl-2-Pentanone	ND	27	1.3
cis-1,3-Dichloropropene	ND	14	0.78
Toluene	16	14	0.87
trans-1,3-Dichloropropene	ND	14	0.66
1,1,2-Trichloroethane	ND	14	1.0
2-Hexanone	ND	27	3.1
1,3-Dichloropropane	ND	14	0.60
Tetrachloroethene	ND	14	0.66
Dibromochloromethane	ND	14	0.77
1,2-Dibromoethane	ND	14	0.58
Chlorobenzene	ND	14	1.1
1,1,1,2-Tetrachloroethane	ND	14	0.74
Ethylbenzene	ND	14	1.0
m,p-Xylenes	ND	14	2.5
o-Xylene	ND	14	0.74
Styrene	ND	14	0.80
Bromoform	ND	14	1.3
Isopropylbenzene	ND	14	0.81
1,1,2,2-Tetrachloroethane	ND	14	1.2
1,2,3-Trichloropropane	ND	14	0.69
Propylbenzene	ND	14	0.86

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-04-02.0	Dil'n Fac:	1.538
Lab ID:	271270-002	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	14	1.2
1,3,5-Trimethylbenzene	ND	14	0.88
2-Chlorotoluene	ND	14	1.1
4-Chlorotoluene	ND	14	1.3
tert-Butylbenzene	ND	14	1.1
1,2,4-Trimethylbenzene	ND	14	0.77
sec-Butylbenzene	ND	14	0.70
para-Isopropyl Toluene	ND	14	0.96
1,3-Dichlorobenzene	ND	14	1.2
1,4-Dichlorobenzene	ND	14	1.1
n-Butylbenzene	ND	14	1.0
1,2-Dichlorobenzene	ND	14	0.77
1,2-Dibromo-3-Chloropropane	ND	14	2.8
1,2,4-Trichlorobenzene	ND	14	1.3
Hexachlorobutadiene	ND	14	1.8
Naphthalene	ND	14	2.9
1,2,3-Trichlorobenzene	ND	14	0.91

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	98	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	112	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-04-04.0	Dil'n Fac:	1.462
Lab ID:	271270-003	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 41%

Analyte	Result	RL	MDL
Freon 12	ND	25	1.1
Chloromethane	ND	25	1.2
Vinyl Chloride	ND	25	1.2
Bromomethane	ND	25	2.6
Chloroethane	ND	25	1.9
Trichlorofluoromethane	ND	12	0.64
Acetone	220	50	8.2
Freon 113	ND	12	1.1
1,1-Dichloroethene	ND	12	1.1
Methylene Chloride	24 J	50	1.1
Carbon Disulfide	2.6 J	12	1.2
MTBE	ND	12	0.38
trans-1,2-Dichloroethene	ND	12	1.5
Vinyl Acetate	ND	120	1.8
1,1-Dichloroethane	ND	12	0.92
2-Butanone	46	25	3.5
cis-1,2-Dichloroethene	ND	12	0.74
2,2-Dichloropropane	ND	12	0.89
Chloroform	ND	12	0.76
Bromochloromethane	ND	12	1.3
1,1,1-Trichloroethane	ND	12	0.99
1,1-Dichloropropene	ND	12	0.63
Carbon Tetrachloride	ND	12	1.2
1,2-Dichloroethane	ND	12	0.85
Benzene	ND	12	1.1
Trichloroethene	ND	12	1.0
1,2-Dichloropropane	ND	12	0.57
Bromodichloromethane	ND	12	0.60
Dibromomethane	ND	12	1.6
4-Methyl-2-Pentanone	ND	25	1.2
cis-1,3-Dichloropropene	ND	12	0.71
Toluene	0.89 J	12	0.79
trans-1,3-Dichloropropene	ND	12	0.59
1,1,2-Trichloroethane	ND	12	0.92
2-Hexanone	ND	25	2.8
1,3-Dichloropropane	ND	12	0.54
Tetrachloroethene	ND	12	0.60
Dibromochloromethane	ND	12	0.69
1,2-Dibromoethane	ND	12	0.53
Chlorobenzene	ND	12	0.98
1,1,1,2-Tetrachloroethane	ND	12	0.67
Ethylbenzene	ND	12	0.94
m,p-Xylenes	ND	12	2.2
o-Xylene	ND	12	0.67
Styrene	ND	12	0.72
Bromoform	ND	12	1.2
Isopropylbenzene	ND	12	0.73
1,1,2,2-Tetrachloroethane	ND	12	1.1
1,2,3-Trichloropropane	ND	12	0.62
Propylbenzene	ND	12	0.77

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-04-04.0	Dil'n Fac:	1.462
Lab ID:	271270-003	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	12	1.1
1,3,5-Trimethylbenzene	ND	12	0.79
2-Chlorotoluene	ND	12	0.96
4-Chlorotoluene	ND	12	1.1
tert-Butylbenzene	ND	12	0.95
1,2,4-Trimethylbenzene	ND	12	0.70
sec-Butylbenzene	ND	12	0.63
para-Isopropyl Toluene	ND	12	0.87
1,3-Dichlorobenzene	ND	12	1.1
1,4-Dichlorobenzene	ND	12	0.98
n-Butylbenzene	ND	12	0.91
1,2-Dichlorobenzene	ND	12	0.70
1,2-Dibromo-3-Chloropropane	ND	12	2.5
1,2,4-Trichlorobenzene	ND	12	1.2
Hexachlorobutadiene	ND	12	1.6
Naphthalene	ND	12	2.6
1,2,3-Trichlorobenzene	ND	12	0.82

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	99	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	113	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-07-02.0	Dil'n Fac:	1.075
Lab ID:	271270-004	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 43%

Analyte	Result	RL	MDL
Freon 12	ND	19	0.87
Chloromethane	ND	19	0.95
Vinyl Chloride	ND	19	0.88
Bromomethane	ND	19	2.0
Chloroethane	ND	19	1.4
Trichlorofluoromethane	ND	9.4	0.48
Acetone	120	38	6.2
Freon 113	ND	9.4	0.85
1,1-Dichloroethene	ND	9.4	0.83
Methylene Chloride	ND	38	0.85
Carbon Disulfide	1.4 J	9.4	0.90
MTBE	ND	9.4	0.29
trans-1,2-Dichloroethene	ND	9.4	1.2
Vinyl Acetate	ND	94	1.4
1,1-Dichloroethane	ND	9.4	0.70
2-Butanone	26	19	2.7
cis-1,2-Dichloroethene	ND	9.4	0.56
2,2-Dichloropropane	ND	9.4	0.68
Chloroform	ND	9.4	0.58
Bromochloromethane	ND	9.4	1.0
1,1,1-Trichloroethane	ND	9.4	0.76
1,1-Dichloropropene	ND	9.4	0.48
Carbon Tetrachloride	ND	9.4	0.92
1,2-Dichloroethane	ND	9.4	0.65
Benzene	ND	9.4	0.82
Trichloroethene	ND	9.4	0.79
1,2-Dichloropropane	ND	9.4	0.44
Bromodichloromethane	ND	9.4	0.46
Dibromomethane	ND	9.4	1.2
4-Methyl-2-Pentanone	ND	19	0.91
cis-1,3-Dichloropropene	ND	9.4	0.54
Toluene	ND	9.4	0.60
trans-1,3-Dichloropropene	ND	9.4	0.45
1,1,2-Trichloroethane	ND	9.4	0.70
2-Hexanone	ND	19	2.1
1,3-Dichloropropane	ND	9.4	0.41
Tetrachloroethene	ND	9.4	0.45
Dibromochloromethane	ND	9.4	0.53
1,2-Dibromoethane	ND	9.4	0.40
Chlorobenzene	ND	9.4	0.75
1,1,1,2-Tetrachloroethane	ND	9.4	0.51
Ethylbenzene	ND	9.4	0.72
m,p-Xylenes	ND	9.4	1.7
o-Xylene	ND	9.4	0.51
Styrene	ND	9.4	0.55
Bromoform	ND	9.4	0.89
Isopropylbenzene	ND	9.4	0.56
1,1,2,2-Tetrachloroethane	ND	9.4	0.81
1,2,3-Trichloropropane	ND	9.4	0.47
Propylbenzene	ND	9.4	0.59

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-07-02.0	Dil'n Fac:	1.075
Lab ID:	271270-004	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	9.4	0.81
1,3,5-Trimethylbenzene	ND	9.4	0.60
2-Chlorotoluene	ND	9.4	0.73
4-Chlorotoluene	ND	9.4	0.87
tert-Butylbenzene	ND	9.4	0.72
1,2,4-Trimethylbenzene	ND	9.4	0.53
sec-Butylbenzene	ND	9.4	0.48
para-Isopropyl Toluene	ND	9.4	0.66
1,3-Dichlorobenzene	ND	9.4	0.80
1,4-Dichlorobenzene	ND	9.4	0.75
n-Butylbenzene	ND	9.4	0.69
1,2-Dichlorobenzene	ND	9.4	0.53
1,2-Dibromo-3-Chloropropane	ND	9.4	1.9
1,2,4-Trichlorobenzene	ND	9.4	0.90
Hexachlorobutadiene	ND	9.4	1.2
Naphthalene	ND	9.4	2.0
1,2,3-Trichlorobenzene	ND	9.4	0.63

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	101	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	111	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-07-04.0	Dil'n Fac:	1.035
Lab ID:	271270-005	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 42%

Analyte	Result	RL	MDL
Freon 12	ND	18	0.71
Chloromethane	ND	18	1.9
Vinyl Chloride	ND	18	1.7
Bromomethane	ND	18	2.1
Chloroethane	ND	18	0.89
Trichlorofluoromethane	ND	8.9	1.2
Acetone	110	36	5.9
Freon 113	ND	8.9	0.78
1,1-Dichloroethene	ND	8.9	1.7
Methylene Chloride	ND	36	2.0
Carbon Disulfide	ND	8.9	1.6
MTBE	ND	8.9	1.8
trans-1,2-Dichloroethene	ND	8.9	1.5
Vinyl Acetate	ND	89	1.3
1,1-Dichloroethane	ND	8.9	2.1
2-Butanone	18	18	2.4
cis-1,2-Dichloroethene	ND	8.9	1.6
2,2-Dichloropropane	ND	8.9	1.9
Chloroform	ND	8.9	2.3
Bromochloromethane	ND	8.9	1.7
1,1,1-Trichloroethane	ND	8.9	1.4
1,1-Dichloropropene	ND	8.9	1.1
Carbon Tetrachloride	ND	8.9	0.85
1,2-Dichloroethane	ND	8.9	1.7
Benzene	ND	8.9	1.6
Trichloroethene	ND	8.9	1.5
1,2-Dichloropropane	ND	8.9	1.4
Bromodichloromethane	ND	8.9	1.5
Dibromomethane	ND	8.9	1.4
4-Methyl-2-Pentanone	ND	18	1.8
cis-1,3-Dichloropropene	ND	8.9	1.1
Toluene	ND	8.9	1.3
trans-1,3-Dichloropropene	ND	8.9	1.2
1,1,2-Trichloroethane	ND	8.9	1.1
2-Hexanone	ND	18	1.6
1,3-Dichloropropane	ND	8.9	1.5
Tetrachloroethene	ND	8.9	0.93
Dibromochloromethane	ND	8.9	0.92
1,2-Dibromoethane	ND	8.9	1.2
Chlorobenzene	ND	8.9	1.2
1,1,1,2-Tetrachloroethane	ND	8.9	1.1
Ethylbenzene	ND	8.9	1.2
m,p-Xylenes	ND	8.9	2.2
o-Xylene	ND	8.9	1.1
Styrene	ND	8.9	1.0
Bromoform	ND	8.9	0.70
Isopropylbenzene	ND	8.9	0.89
1,1,2,2-Tetrachloroethane	ND	8.9	0.73
1,2,3-Trichloropropane	ND	8.9	1.0
Propylbenzene	ND	8.9	0.80
Bromobenzene	ND	8.9	0.95

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-07-04.0	Dil'n Fac:	1.035
Lab ID:	271270-005	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	8.9	1.0
2-Chlorotoluene	ND	8.9	1.2
4-Chlorotoluene	ND	8.9	1.2
tert-Butylbenzene	ND	8.9	0.72
1,2,4-Trimethylbenzene	ND	8.9	1.1
sec-Butylbenzene	ND	8.9	0.75
para-Isopropyl Toluene	ND	8.9	0.76
1,3-Dichlorobenzene	ND	8.9	0.79
1,4-Dichlorobenzene	ND	8.9	0.96
n-Butylbenzene	ND	8.9	0.68
1,2-Dichlorobenzene	ND	8.9	0.95
1,2-Dibromo-3-Chloropropane	ND	8.9	1.7
1,2,4-Trichlorobenzene	ND	8.9	0.75
Hexachlorobutadiene	ND	8.9	0.53
Naphthalene	ND	8.9	1.8
1,2,3-Trichlorobenzene	ND	8.9	0.76

Surrogate	%REC	Limits
Dibromofluoromethane	110	78-134
1,2-Dichloroethane-d4	133	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	107	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-06-02.0	Diln Fac:	0.8881
Lab ID:	271270-006	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 32%

Analyte	Result	RL	MDL
Freon 12	ND	13	0.60
Chloromethane	ND	13	0.66
Vinyl Chloride	ND	13	0.61
Bromomethane	ND	13	1.4
Chloroethane	ND	13	0.98
Trichlorofluoromethane	ND	6.5	0.33
Acetone	4.7 J	26	4.3
Freon 113	ND	6.5	0.59
1,1-Dichloroethene	ND	6.5	0.57
Methylene Chloride	ND	26	0.59
Carbon Disulfide	1.2 J	6.5	0.62
MTBE	ND	6.5	0.20
trans-1,2-Dichloroethene	ND	6.5	0.81
Vinyl Acetate	ND	65	0.97
1,1-Dichloroethane	ND	6.5	0.48
2-Butanone	ND	13	1.9
cis-1,2-Dichloroethene	ND	6.5	0.39
2,2-Dichloropropane	ND	6.5	0.47
Chloroform	ND	6.5	0.40
Bromochloromethane	ND	6.5	0.70
1,1,1-Trichloroethane	ND	6.5	0.52
1,1-Dichloropropene	ND	6.5	0.33
Carbon Tetrachloride	ND	6.5	0.63
1,2-Dichloroethane	ND	6.5	0.45
Benzene	ND	6.5	0.57
Trichloroethene	ND	6.5	0.55
1,2-Dichloropropane	ND	6.5	0.30
Bromodichloromethane	ND	6.5	0.32
Dibromomethane	ND	6.5	0.85
4-Methyl-2-Pentanone	ND	13	0.63
cis-1,3-Dichloropropene	ND	6.5	0.37
Toluene	ND	6.5	0.41
trans-1,3-Dichloropropene	ND	6.5	0.31
1,1,2-Trichloroethane	ND	6.5	0.48
2-Hexanone	ND	13	1.5
1,3-Dichloropropane	ND	6.5	0.29
Tetrachloroethene	ND	6.5	0.31
Dibromochloromethane	ND	6.5	0.37
1,2-Dibromoethane	ND	6.5	0.28
Chlorobenzene	ND	6.5	0.52
1,1,1,2-Tetrachloroethane	ND	6.5	0.35
Ethylbenzene	ND	6.5	0.50
m,p-Xylenes	ND	6.5	1.2
o-Xylene	ND	6.5	0.35
Styrene	ND	6.5	0.38
Bromoform	ND	6.5	0.61
Isopropylbenzene	ND	6.5	0.39
1,1,2,2-Tetrachloroethane	ND	6.5	0.56
1,2,3-Trichloropropane	ND	6.5	0.33
Propylbenzene	ND	6.5	0.41

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-06-02.0	Dil'n Fac:	0.8881
Lab ID:	271270-006	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	6.5	0.56
1,3,5-Trimethylbenzene	ND	6.5	0.42
2-Chlorotoluene	ND	6.5	0.50
4-Chlorotoluene	ND	6.5	0.60
tert-Butylbenzene	ND	6.5	0.50
1,2,4-Trimethylbenzene	ND	6.5	0.37
sec-Butylbenzene	ND	6.5	0.33
para-Isopropyl Toluene	ND	6.5	0.46
1,3-Dichlorobenzene	ND	6.5	0.56
1,4-Dichlorobenzene	ND	6.5	0.52
n-Butylbenzene	ND	6.5	0.48
1,2-Dichlorobenzene	ND	6.5	0.37
1,2-Dibromo-3-Chloropropane	ND	6.5	1.3
1,2,4-Trichlorobenzene	ND	6.5	0.62
Hexachlorobutadiene	ND	6.5	0.86
Naphthalene	ND	6.5	1.4
1,2,3-Trichlorobenzene	ND	6.5	0.43

Surrogate	%REC	Limits
Dibromofluoromethane	106	78-134
1,2-Dichloroethane-d4	104	80-138
Toluene-d8	109	80-120
Bromofluorobenzene	115	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-06-04.0	Diln Fac:	0.9804
Lab ID:	271270-007	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 39%

Analyte	Result	RL	MDL
Freon 12	ND	16	0.64
Chloromethane	ND	16	1.7
Vinyl Chloride	ND	16	1.5
Bromomethane	ND	16	1.9
Chloroethane	ND	16	0.80
Trichlorofluoromethane	ND	8.0	1.1
Acetone	230	32	5.3
Freon 113	ND	8.0	0.71
1,1-Dichloroethene	ND	8.0	1.5
Methylene Chloride	ND	32	1.8
Carbon Disulfide	ND	8.0	1.4
MTBE	ND	8.0	1.6
trans-1,2-Dichloroethene	ND	8.0	1.3
Vinyl Acetate	ND	80	1.2
1,1-Dichloroethane	ND	8.0	1.9
2-Butanone	23	16	2.2
cis-1,2-Dichloroethene	ND	8.0	1.4
2,2-Dichloropropane	ND	8.0	1.7
Chloroform	ND	8.0	2.0
Bromochloromethane	ND	8.0	1.5
1,1,1-Trichloroethane	ND	8.0	1.3
1,1-Dichloropropene	ND	8.0	1.0
Carbon Tetrachloride	ND	8.0	0.77
1,2-Dichloroethane	ND	8.0	1.5
Benzene	ND	8.0	1.5
Trichloroethene	ND	8.0	1.3
1,2-Dichloropropane	ND	8.0	1.2
Bromodichloromethane	ND	8.0	1.4
Dibromomethane	ND	8.0	1.2
4-Methyl-2-Pentanone	ND	16	1.6
cis-1,3-Dichloropropene	ND	8.0	0.97
Toluene	ND	8.0	1.1
trans-1,3-Dichloropropene	ND	8.0	1.0
1,1,2-Trichloroethane	ND	8.0	1.0
2-Hexanone	ND	16	1.4
1,3-Dichloropropane	ND	8.0	1.4
Tetrachloroethene	ND	8.0	0.84
Dibromochloromethane	ND	8.0	0.83
1,2-Dibromoethane	ND	8.0	1.0
Chlorobenzene	ND	8.0	1.1
1,1,1,2-Tetrachloroethane	ND	8.0	1.0
Ethylbenzene	ND	8.0	1.1
m,p-Xylenes	ND	8.0	2.0
o-Xylene	ND	8.0	1.0
Styrene	ND	8.0	0.93
Bromoform	ND	8.0	0.63
Isopropylbenzene	ND	8.0	0.80
1,1,2,2-Tetrachloroethane	ND	8.0	0.66
1,2,3-Trichloropropane	ND	8.0	0.93
Propylbenzene	ND	8.0	0.72
Bromobenzene	ND	8.0	0.85

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-06-04.0	Dil'n Fac:	0.9804
Lab ID:	271270-007	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	8.0	0.91
2-Chlorotoluene	ND	8.0	1.1
4-Chlorotoluene	ND	8.0	1.0
tert-Butylbenzene	ND	8.0	0.65
1,2,4-Trimethylbenzene	ND	8.0	0.96
sec-Butylbenzene	ND	8.0	0.67
para-Isopropyl Toluene	ND	8.0	0.68
1,3-Dichlorobenzene	ND	8.0	0.71
1,4-Dichlorobenzene	ND	8.0	0.87
n-Butylbenzene	ND	8.0	0.61
1,2-Dichlorobenzene	ND	8.0	0.85
1,2-Dibromo-3-Chloropropane	ND	8.0	1.5
1,2,4-Trichlorobenzene	ND	8.0	0.67
Hexachlorobutadiene	ND	8.0	0.48
Naphthalene	ND	8.0	1.6
1,2,3-Trichlorobenzene	ND	8.0	0.69

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	135	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	102	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-05-02.0	Dil'n Fac:	1.040
Lab ID:	271270-008	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 41%

Analyte	Result	RL	MDL
Freon 12	ND	18	0.82
Chloromethane	ND	18	0.89
Vinyl Chloride	ND	18	0.82
Bromomethane	ND	18	1.9
Chloroethane	ND	18	1.3
Trichlorofluoromethane	ND	8.8	0.45
Acetone	93	35	5.8
Freon 113	ND	8.8	0.79
1,1-Dichloroethene	ND	8.8	0.78
Methylene Chloride	ND	35	0.79
Carbon Disulfide	1.3 J	8.8	0.84
MTBE	ND	8.8	0.27
trans-1,2-Dichloroethene	ND	8.8	1.1
Vinyl Acetate	ND	88	1.3
1,1-Dichloroethane	ND	8.8	0.65
2-Butanone	19	18	2.5
cis-1,2-Dichloroethene	ND	8.8	0.53
2,2-Dichloropropane	ND	8.8	0.63
Chloroform	ND	8.8	0.54
Bromochloromethane	ND	8.8	0.94
1,1,1-Trichloroethane	ND	8.8	0.71
1,1-Dichloropropene	ND	8.8	0.44
Carbon Tetrachloride	ND	8.8	0.85
1,2-Dichloroethane	ND	8.8	0.61
Benzene	ND	8.8	0.77
Trichloroethene	ND	8.8	0.74
1,2-Dichloropropane	ND	8.8	0.41
Bromodichloromethane	ND	8.8	0.43
Dibromomethane	ND	8.8	1.1
4-Methyl-2-Pentanone	ND	18	0.85
cis-1,3-Dichloropropene	ND	8.8	0.50
Toluene	ND	8.8	0.56
trans-1,3-Dichloropropene	ND	8.8	0.42
1,1,2-Trichloroethane	ND	8.8	0.65
2-Hexanone	ND	18	2.0
1,3-Dichloropropane	ND	8.8	0.39
Tetrachloroethene	ND	8.8	0.42
Dibromochloromethane	ND	8.8	0.49
1,2-Dibromoethane	ND	8.8	0.37
Chlorobenzene	ND	8.8	0.70
1,1,1,2-Tetrachloroethane	ND	8.8	0.48
Ethylbenzene	ND	8.8	0.67
m,p-Xylenes	ND	8.8	1.6
o-Xylene	ND	8.8	0.48
Styrene	ND	8.8	0.51
Bromoform	ND	8.8	0.83
Isopropylbenzene	ND	8.8	0.52
1,1,2,2-Tetrachloroethane	ND	8.8	0.76
1,2,3-Trichloropropane	ND	8.8	0.44
Propylbenzene	ND	8.8	0.55

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-05-02.0	Dil'n Fac:	1.040
Lab ID:	271270-008	Batch#:	229042
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
Bromobenzene	ND	8.8	0.75
1,3,5-Trimethylbenzene	ND	8.8	0.56
2-Chlorotoluene	ND	8.8	0.68
4-Chlorotoluene	ND	8.8	0.81
tert-Butylbenzene	ND	8.8	0.68
1,2,4-Trimethylbenzene	ND	8.8	0.50
sec-Butylbenzene	ND	8.8	0.45
para-Isopropyl Toluene	ND	8.8	0.62
1,3-Dichlorobenzene	ND	8.8	0.75
1,4-Dichlorobenzene	ND	8.8	0.70
n-Butylbenzene	ND	8.8	0.64
1,2-Dichlorobenzene	ND	8.8	0.50
1,2-Dibromo-3-Chloropropane	ND	8.8	1.8
1,2,4-Trichlorobenzene	ND	8.8	0.84
Hexachlorobutadiene	ND	8.8	1.2
Naphthalene	ND	8.8	1.9
1,2,3-Trichlorobenzene	ND	8.8	0.59

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	101	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	112	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-05-04.0	Diln Fac:	1.025
Lab ID:	271270-009	Batch#:	229152
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Moisture: 39%

Analyte	Result	RL	MDL
Freon 12	ND	17	0.78
Chloromethane	ND	17	0.85
Vinyl Chloride	ND	17	0.78
Bromomethane	ND	17	1.8
Chloroethane	ND	17	1.3
Trichlorofluoromethane	ND	8.4	0.43
Acetone	92	34	5.5
Freon 113	ND	8.4	0.76
1,1-Dichloroethene	ND	8.4	0.74
Methylene Chloride	ND	34	0.75
Carbon Disulfide	1.1 J	8.4	0.80
MTBE	ND	8.4	0.26
trans-1,2-Dichloroethene	ND	8.4	1.0
Vinyl Acetate	ND	84	1.2
1,1-Dichloroethane	ND	8.4	0.62
2-Butanone	19	17	2.4
cis-1,2-Dichloroethene	ND	8.4	0.50
2,2-Dichloropropane	ND	8.4	0.61
Chloroform	ND	8.4	0.52
Bromochloromethane	ND	8.4	0.90
1,1,1-Trichloroethane	ND	8.4	0.67
1,1-Dichloropropene	ND	8.4	0.42
Carbon Tetrachloride	ND	8.4	0.81
1,2-Dichloroethane	ND	8.4	0.58
Benzene	ND	8.4	0.73
Trichloroethene	ND	8.4	0.70
1,2-Dichloropropane	ND	8.4	0.39
Bromodichloromethane	ND	8.4	0.41
Dibromomethane	ND	8.4	1.1
4-Methyl-2-Pentanone	ND	17	0.81
cis-1,3-Dichloropropene	ND	8.4	0.48
Toluene	ND	8.4	0.53
trans-1,3-Dichloropropene	ND	8.4	0.40
1,1,2-Trichloroethane	ND	8.4	0.62
2-Hexanone	ND	17	1.9
1,3-Dichloropropane	ND	8.4	0.37
Tetrachloroethene	ND	8.4	0.40
Dibromochloromethane	ND	8.4	0.47
1,2-Dibromoethane	ND	8.4	0.36
Chlorobenzene	ND	8.4	0.66
1,1,1,2-Tetrachloroethane	ND	8.4	0.46
Ethylbenzene	ND	8.4	0.64
m,p-Xylenes	ND	8.4	1.5
o-Xylene	ND	8.4	0.45
Styrene	ND	8.4	0.49
Bromoform	ND	8.4	0.79
Isopropylbenzene	ND	8.4	0.50
1,1,2,2-Tetrachloroethane	ND	8.4	0.72
1,2,3-Trichloropropane	ND	8.4	0.42
Propylbenzene	ND	8.4	0.52

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-05-04.0	Dil'n Fac:	1.025
Lab ID:	271270-009	Batch#:	229152
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Analyte	Result	RL	MDL
Bromobenzene	ND	8.4	0.72
1,3,5-Trimethylbenzene	ND	8.4	0.54
2-Chlorotoluene	ND	8.4	0.65
4-Chlorotoluene	ND	8.4	0.77
tert-Butylbenzene	ND	8.4	0.64
1,2,4-Trimethylbenzene	ND	8.4	0.47
sec-Butylbenzene	ND	8.4	0.43
para-Isopropyl Toluene	ND	8.4	0.59
1,3-Dichlorobenzene	ND	8.4	0.72
1,4-Dichlorobenzene	ND	8.4	0.66
n-Butylbenzene	ND	8.4	0.61
1,2-Dichlorobenzene	ND	8.4	0.47
1,2-Dibromo-3-Chloropropane	ND	8.4	1.7
1,2,4-Trichlorobenzene	ND	8.4	0.80
Hexachlorobutadiene	ND	8.4	1.1
Naphthalene	ND	8.4	1.8
1,2,3-Trichlorobenzene	ND	8.4	0.56

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	103	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	107	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-75.0	Diln Fac:	0.6887
Lab ID:	271270-010	Batch#:	229043
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Moisture: 18%

Analyte	Result	RL	MDL
Freon 12	ND	8.4	0.33
Chloromethane	ND	8.4	0.87
Vinyl Chloride	ND	8.4	0.78
Bromomethane	ND	8.4	0.98
Chloroethane	ND	8.4	0.42
Trichlorofluoromethane	ND	4.2	0.58
Acetone	ND	17	2.8
Freon 113	ND	4.2	0.37
1,1-Dichloroethene	ND	4.2	0.79
Methylene Chloride	ND	17	0.93
Carbon Disulfide	ND	4.2	0.73
MTBE	ND	4.2	0.84
trans-1,2-Dichloroethene	ND	4.2	0.70
Vinyl Acetate	ND	42	0.61
1,1-Dichloroethane	ND	4.2	0.97
2-Butanone	ND	8.4	1.1
cis-1,2-Dichloroethene	ND	4.2	0.73
2,2-Dichloropropane	ND	4.2	0.91
Chloroform	ND	4.2	1.1
Bromochloromethane	ND	4.2	0.79
1,1,1-Trichloroethane	ND	4.2	0.68
1,1-Dichloropropene	ND	4.2	0.53
Carbon Tetrachloride	ND	4.2	0.40
1,2-Dichloroethane	ND	4.2	0.78
Benzene	ND	4.2	0.76
Trichloroethene	ND	4.2	0.70
1,2-Dichloropropane	ND	4.2	0.65
Bromodichloromethane	ND	4.2	0.71
Dibromomethane	ND	4.2	0.65
4-Methyl-2-Pentanone	ND	8.4	0.85
cis-1,3-Dichloropropene	ND	4.2	0.51
Toluene	ND	4.2	0.60
trans-1,3-Dichloropropene	ND	4.2	0.55
1,1,2-Trichloroethane	ND	4.2	0.52
2-Hexanone	ND	8.4	0.74
1,3-Dichloropropane	ND	4.2	0.71
Tetrachloroethene	ND	4.2	0.44
Dibromochloromethane	ND	4.2	0.43
1,2-Dibromoethane	ND	4.2	0.55
Chlorobenzene	ND	4.2	0.58
1,1,1,2-Tetrachloroethane	ND	4.2	0.52
Ethylbenzene	ND	4.2	0.57
m,p-Xylenes	ND	4.2	1.1
o-Xylene	ND	4.2	0.53
Styrene	ND	4.2	0.48
Bromoform	ND	4.2	0.33
Isopropylbenzene	ND	4.2	0.42
1,1,2,2-Tetrachloroethane	ND	4.2	0.34
1,2,3-Trichloropropane	ND	4.2	0.49
Propylbenzene	ND	4.2	0.37
Bromobenzene	ND	4.2	0.45

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-75.0	Dil'n Fac:	0.6887
Lab ID:	271270-010	Batch#:	229043
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/04/15

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	4.2	0.48
2-Chlorotoluene	ND	4.2	0.57
4-Chlorotoluene	ND	4.2	0.54
tert-Butylbenzene	ND	4.2	0.34
1,2,4-Trimethylbenzene	ND	4.2	0.50
sec-Butylbenzene	ND	4.2	0.35
para-Isopropyl Toluene	ND	4.2	0.36
1,3-Dichlorobenzene	ND	4.2	0.37
1,4-Dichlorobenzene	ND	4.2	0.45
n-Butylbenzene	ND	4.2	0.32
1,2-Dichlorobenzene	ND	4.2	0.45
1,2-Dibromo-3-Chloropropane	ND	4.2	0.79
1,2,4-Trichlorobenzene	ND	4.2	0.35
Hexachlorobutadiene	ND	4.2	0.25
Naphthalene	ND	4.2	0.84
1,2,3-Trichlorobenzene	ND	4.2	0.36

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	132	80-138
Toluene-d8	107	80-120
Bromofluorobenzene	100	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-03-02.0	Basis:	dry
Lab ID:	271270-011	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 39%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	15	0.60	0.9242	229043	11/04/15
Chloromethane	ND	15	1.6	0.9242	229043	11/04/15
Vinyl Chloride	ND	15	1.4	0.9242	229043	11/04/15
Bromomethane	ND	15	1.8	0.9242	229043	11/04/15
Chloroethane	ND	15	0.75	0.9242	229043	11/04/15
Trichlorofluoromethane	ND	7.6	1.1	0.9242	229043	11/04/15
Acetone	ND	1,500	240	44.49	229199	11/09/15
Freon 113	ND	7.6	0.67	0.9242	229043	11/04/15
1,1-Dichloroethene	ND	7.6	1.4	0.9242	229043	11/04/15
Methylene Chloride	6.1 J	30	1.7	0.9242	229043	11/04/15
Carbon Disulfide	ND	7.6	1.3	0.9242	229043	11/04/15
MTBE	ND	7.6	1.5	0.9242	229043	11/04/15
trans-1,2-Dichloroethene	ND	7.6	1.3	0.9242	229043	11/04/15
Vinyl Acetate	ND	76	1.1	0.9242	229043	11/04/15
1,1-Dichloroethane	ND	7.6	1.7	0.9242	229043	11/04/15
2-Butanone	49	15	2.0	0.9242	229043	11/04/15
cis-1,2-Dichloroethene	ND	7.6	1.3	0.9242	229043	11/04/15
2,2-Dichloropropane	ND	7.6	1.6	0.9242	229043	11/04/15
Chloroform	ND	7.6	1.9	0.9242	229043	11/04/15
Bromochloromethane	ND	7.6	1.4	0.9242	229043	11/04/15
1,1,1-Trichloroethane	ND	7.6	1.2	0.9242	229043	11/04/15
1,1-Dichloropropene	ND	7.6	0.95	0.9242	229043	11/04/15
Carbon Tetrachloride	ND	7.6	0.72	0.9242	229043	11/04/15
1,2-Dichloroethane	ND	7.6	1.4	0.9242	229043	11/04/15
Benzene	ND	7.6	1.4	0.9242	229043	11/04/15
Trichloroethene	ND	7.6	1.3	0.9242	229043	11/04/15
1,2-Dichloropropane	ND	7.6	1.2	0.9242	229043	11/04/15
Bromodichloromethane	ND	7.6	1.3	0.9242	229043	11/04/15
Dibromomethane	ND	7.6	1.2	0.9242	229043	11/04/15
4-Methyl-2-Pentanone	ND	15	1.5	0.9242	229043	11/04/15
cis-1,3-Dichloropropene	ND	7.6	0.92	0.9242	229043	11/04/15
Toluene	3.2 J	7.6	1.1	0.9242	229043	11/04/15
trans-1,3-Dichloropropene	ND	7.6	0.98	0.9242	229043	11/04/15
1,1,2-Trichloroethane	ND	7.6	0.94	0.9242	229043	11/04/15
2-Hexanone	ND	15	1.3	0.9242	229043	11/04/15
1,3-Dichloropropane	ND	7.6	1.3	0.9242	229043	11/04/15
Tetrachloroethene	ND	7.6	0.79	0.9242	229043	11/04/15
Dibromochloromethane	ND	7.6	0.78	0.9242	229043	11/04/15
1,2-Dibromoethane	ND	7.6	0.99	0.9242	229043	11/04/15
Chlorobenzene	ND	7.6	1.0	0.9242	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	7.6	0.94	0.9242	229043	11/04/15
Ethylbenzene	ND	7.6	1.0	0.9242	229043	11/04/15
m,p-Xylenes	ND	7.6	1.9	0.9242	229043	11/04/15
o-Xylene	ND	7.6	0.95	0.9242	229043	11/04/15
Styrene	ND	7.6	0.87	0.9242	229043	11/04/15
Bromoform	ND	7.6	0.59	0.9242	229043	11/04/15
Isopropylbenzene	ND	7.6	0.76	0.9242	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	7.6	0.62	0.9242	229043	11/04/15
1,2,3-Trichloropropane	ND	7.6	0.88	0.9242	229043	11/04/15
Propylbenzene	ND	7.6	0.68	0.9242	229043	11/04/15
Bromobenzene	ND	7.6	0.80	0.9242	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-03-02.0	Basis:	dry
Lab ID:	271270-011	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	7.6	0.86	0.9242	229043	11/04/15
2-Chlorotoluene	ND	7.6	1.0	0.9242	229043	11/04/15
4-Chlorotoluene	ND	7.6	0.98	0.9242	229043	11/04/15
tert-Butylbenzene	ND	7.6	0.61	0.9242	229043	11/04/15
1,2,4-Trimethylbenzene	ND	7.6	0.91	0.9242	229043	11/04/15
sec-Butylbenzene	ND	7.6	0.63	0.9242	229043	11/04/15
para-Isopropyl Toluene	ND	7.6	0.64	0.9242	229043	11/04/15
1,3-Dichlorobenzene	ND	7.6	0.67	0.9242	229043	11/04/15
1,4-Dichlorobenzene	ND	7.6	0.82	0.9242	229043	11/04/15
n-Butylbenzene	ND	7.6	0.58	0.9242	229043	11/04/15
1,2-Dichlorobenzene	ND	7.6	0.80	0.9242	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	7.6	1.4	0.9242	229043	11/04/15
1,2,4-Trichlorobenzene	ND	7.6	0.63	0.9242	229043	11/04/15
Hexachlorobutadiene	ND	7.6	0.45	0.9242	229043	11/04/15
Naphthalene	ND	7.6	1.5	0.9242	229043	11/04/15
1,2,3-Trichlorobenzene	ND	7.6	0.65	0.9242	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	116	78-134	0.9242	229043	11/04/15
1,2-Dichloroethane-d4	137	80-138	0.9242	229043	11/04/15
Toluene-d8	97	80-120	0.9242	229043	11/04/15
Bromofluorobenzene	103	78-123	0.9242	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-03-04.0	Basis:	dry
Lab ID:	271270-012	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 45%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	21	0.82	1.136	229043	11/04/15
Chloromethane	ND	21	2.1	1.136	229043	11/04/15
Vinyl Chloride	ND	21	1.9	1.136	229043	11/04/15
Bromomethane	ND	21	2.4	1.136	229043	11/04/15
Chloroethane	ND	21	1.0	1.136	229043	11/04/15
Trichlorofluoromethane	ND	10	1.4	1.136	229043	11/04/15
Acetone	130	37	6.2	1.031	229152	11/06/15
Freon 113	ND	10	0.91	1.136	229043	11/04/15
1,1-Dichloroethene	ND	10	1.9	1.136	229043	11/04/15
Methylene Chloride	7.1 J	41	2.3	1.136	229043	11/04/15
Carbon Disulfide	2.6 J	10	1.8	1.136	229043	11/04/15
MTBE	ND	10	2.1	1.136	229043	11/04/15
trans-1,2-Dichloroethene	ND	10	1.7	1.136	229043	11/04/15
Vinyl Acetate	ND	100	1.5	1.136	229043	11/04/15
1,1-Dichloroethane	ND	10	2.4	1.136	229043	11/04/15
2-Butanone	15 J	21	2.8	1.136	229043	11/04/15
cis-1,2-Dichloroethene	ND	10	1.8	1.136	229043	11/04/15
2,2-Dichloropropane	ND	10	2.2	1.136	229043	11/04/15
Chloroform	ND	10	2.6	1.136	229043	11/04/15
Bromochloromethane	ND	10	1.9	1.136	229043	11/04/15
1,1,1-Trichloroethane	ND	10	1.7	1.136	229043	11/04/15
1,1-Dichloropropene	ND	10	1.3	1.136	229043	11/04/15
Carbon Tetrachloride	ND	10	0.99	1.136	229043	11/04/15
1,2-Dichloroethane	ND	10	1.9	1.136	229043	11/04/15
Benzene	ND	10	1.9	1.136	229043	11/04/15
Trichloroethene	ND	10	1.7	1.136	229043	11/04/15
1,2-Dichloropropane	ND	10	1.6	1.136	229043	11/04/15
Bromodichloromethane	ND	10	1.7	1.136	229043	11/04/15
Dibromomethane	ND	10	1.6	1.136	229043	11/04/15
4-Methyl-2-Pentanone	ND	21	2.1	1.136	229043	11/04/15
cis-1,3-Dichloropropene	ND	10	1.3	1.136	229043	11/04/15
Toluene	ND	10	1.5	1.136	229043	11/04/15
trans-1,3-Dichloropropene	ND	10	1.3	1.136	229043	11/04/15
1,1,2-Trichloroethane	ND	10	1.3	1.136	229043	11/04/15
2-Hexanone	ND	21	1.8	1.136	229043	11/04/15
1,3-Dichloropropane	ND	10	1.7	1.136	229043	11/04/15
Tetrachloroethene	ND	10	1.1	1.136	229043	11/04/15
Dibromochloromethane	ND	10	1.1	1.136	229043	11/04/15
1,2-Dibromoethane	ND	10	1.3	1.136	229043	11/04/15
Chlorobenzene	ND	10	1.4	1.136	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	10	1.3	1.136	229043	11/04/15
Ethylbenzene	ND	10	1.4	1.136	229043	11/04/15
m,p-Xylenes	ND	10	2.6	1.136	229043	11/04/15
o-Xylene	ND	10	1.3	1.136	229043	11/04/15
Styrene	ND	10	1.2	1.136	229043	11/04/15
Bromoform	ND	10	0.81	1.136	229043	11/04/15
Isopropylbenzene	ND	10	1.0	1.136	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	10	0.85	1.136	229043	11/04/15
1,2,3-Trichloropropane	ND	10	1.2	1.136	229043	11/04/15
Propylbenzene	ND	10	0.92	1.136	229043	11/04/15
Bromobenzene	ND	10	1.1	1.136	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-03-04.0	Basis:	dry
Lab ID:	271270-012	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	10	1.2	1.136	229043	11/04/15
2-Chlorotoluene	ND	10	1.4	1.136	229043	11/04/15
4-Chlorotoluene	ND	10	1.3	1.136	229043	11/04/15
tert-Butylbenzene	ND	10	0.83	1.136	229043	11/04/15
1,2,4-Trimethylbenzene	ND	10	1.2	1.136	229043	11/04/15
sec-Butylbenzene	ND	10	0.86	1.136	229043	11/04/15
para-Isopropyl Toluene	ND	10	0.88	1.136	229043	11/04/15
1,3-Dichlorobenzene	ND	10	0.91	1.136	229043	11/04/15
1,4-Dichlorobenzene	ND	10	1.1	1.136	229043	11/04/15
n-Butylbenzene	ND	10	0.79	1.136	229043	11/04/15
1,2-Dichlorobenzene	ND	10	1.1	1.136	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	10	1.9	1.136	229043	11/04/15
1,2,4-Trichlorobenzene	ND	10	0.86	1.136	229043	11/04/15
Hexachlorobutadiene	ND	10	0.62	1.136	229043	11/04/15
Naphthalene	ND	10	2.1	1.136	229043	11/04/15
1,2,3-Trichlorobenzene	ND	10	0.88	1.136	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	115	78-134	1.136	229043	11/04/15
1,2-Dichloroethane-d4	138	80-138	1.136	229043	11/04/15
Toluene-d8	102	80-120	1.136	229043	11/04/15
Bromofluorobenzene	102	78-123	1.136	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-08-02.0	Basis:	dry
Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 45%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	20	0.78	1.075	229043	11/04/15
Chloromethane	ND	20	2.0	1.075	229043	11/04/15
Vinyl Chloride	ND	20	1.8	1.075	229043	11/04/15
Bromomethane	ND	20	2.3	1.075	229043	11/04/15
Chloroethane	ND	20	0.97	1.075	229043	11/04/15
Trichlorofluoromethane	ND	9.8	1.4	1.075	229043	11/04/15
Acetone	150	36	6.0	1.002	229152	11/06/15
Freon 113	ND	9.8	0.86	1.075	229043	11/04/15
1,1-Dichloroethene	ND	9.8	1.8	1.075	229043	11/04/15
Methylene Chloride	8.2 J	39	2.2	1.075	229043	11/04/15
Carbon Disulfide	ND	9.8	1.7	1.075	229043	11/04/15
MTBE	ND	9.8	2.0	1.075	229043	11/04/15
trans-1,2-Dichloroethene	ND	9.8	1.6	1.075	229043	11/04/15
Vinyl Acetate	ND	98	1.4	1.075	229043	11/04/15
1,1-Dichloroethane	ND	9.8	2.3	1.075	229043	11/04/15
2-Butanone	11 J	20	2.6	1.075	229043	11/04/15
cis-1,2-Dichloroethene	ND	9.8	1.7	1.075	229043	11/04/15
2,2-Dichloropropane	ND	9.8	2.1	1.075	229043	11/04/15
Chloroform	ND	9.8	2.5	1.075	229043	11/04/15
Bromochloromethane	ND	9.8	1.8	1.075	229043	11/04/15
1,1,1-Trichloroethane	ND	9.8	1.6	1.075	229043	11/04/15
1,1-Dichloropropene	ND	9.8	1.2	1.075	229043	11/04/15
Carbon Tetrachloride	ND	9.8	0.93	1.075	229043	11/04/15
1,2-Dichloroethane	ND	9.8	1.8	1.075	229043	11/04/15
Benzene	ND	9.8	1.8	1.075	229043	11/04/15
Trichloroethene	ND	9.8	1.6	1.075	229043	11/04/15
1,2-Dichloropropane	ND	9.8	1.5	1.075	229043	11/04/15
Bromodichloromethane	ND	9.8	1.7	1.075	229043	11/04/15
Dibromomethane	ND	9.8	1.5	1.075	229043	11/04/15
4-Methyl-2-Pentanone	ND	20	2.0	1.075	229043	11/04/15
cis-1,3-Dichloropropene	ND	9.8	1.2	1.075	229043	11/04/15
Toluene	ND	9.8	1.4	1.075	229043	11/04/15
trans-1,3-Dichloropropene	ND	9.8	1.3	1.075	229043	11/04/15
1,1,2-Trichloroethane	ND	9.8	1.2	1.075	229043	11/04/15
2-Hexanone	ND	20	1.7	1.075	229043	11/04/15
1,3-Dichloropropane	ND	9.8	1.7	1.075	229043	11/04/15
Tetrachloroethene	ND	9.8	1.0	1.075	229043	11/04/15
Dibromochloromethane	ND	9.8	1.0	1.075	229043	11/04/15
1,2-Dibromoethane	ND	9.8	1.3	1.075	229043	11/04/15
Chlorobenzene	ND	9.8	1.3	1.075	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	9.8	1.2	1.075	229043	11/04/15
Ethylbenzene	ND	9.8	1.3	1.075	229043	11/04/15
m,p-Xylenes	ND	9.8	2.4	1.075	229043	11/04/15
o-Xylene	ND	9.8	1.2	1.075	229043	11/04/15
Styrene	ND	9.8	1.1	1.075	229043	11/04/15
Bromoform	ND	9.8	0.77	1.075	229043	11/04/15
Isopropylbenzene	ND	9.8	0.98	1.075	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	9.8	0.80	1.075	229043	11/04/15
1,2,3-Trichloropropane	ND	9.8	1.1	1.075	229043	11/04/15
Propylbenzene	ND	9.8	0.87	1.075	229043	11/04/15
Bromobenzene	ND	9.8	1.0	1.075	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-08-02.0	Basis:	dry
Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	9.8	1.1	1.075	229043	11/04/15
2-Chlorotoluene	ND	9.8	1.3	1.075	229043	11/04/15
4-Chlorotoluene	ND	9.8	1.3	1.075	229043	11/04/15
tert-Butylbenzene	ND	9.8	0.79	1.075	229043	11/04/15
1,2,4-Trimethylbenzene	ND	9.8	1.2	1.075	229043	11/04/15
sec-Butylbenzene	ND	9.8	0.82	1.075	229043	11/04/15
para-Isopropyl Toluene	ND	9.8	0.83	1.075	229043	11/04/15
1,3-Dichlorobenzene	ND	9.8	0.86	1.075	229043	11/04/15
1,4-Dichlorobenzene	ND	9.8	1.1	1.075	229043	11/04/15
n-Butylbenzene	ND	9.8	0.74	1.075	229043	11/04/15
1,2-Dichlorobenzene	ND	9.8	1.0	1.075	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	9.8	1.8	1.075	229043	11/04/15
1,2,4-Trichlorobenzene	ND	9.8	0.82	1.075	229043	11/04/15
Hexachlorobutadiene	ND	9.8	0.58	1.075	229043	11/04/15
Naphthalene	ND	9.8	2.0	1.075	229043	11/04/15
1,2,3-Trichlorobenzene	ND	9.8	0.84	1.075	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	110	78-134	1.075	229043	11/04/15
1,2-Dichloroethane-d4	137	80-138	1.075	229043	11/04/15
Toluene-d8	104	80-120	1.075	229043	11/04/15
Bromofluorobenzene	100	78-123	1.075	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-08-04.0	Basis:	dry
Lab ID:	271270-014	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 46%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	19	0.78	1.050	229043	11/04/15
Chloromethane	ND	19	2.0	1.050	229043	11/04/15
Vinyl Chloride	ND	19	1.8	1.050	229043	11/04/15
Bromomethane	ND	19	2.3	1.050	229043	11/04/15
Chloroethane	ND	19	0.97	1.050	229043	11/04/15
Trichlorofluoromethane	ND	9.7	1.4	1.050	229043	11/04/15
Acetone	140	40	6.6	1.075	229152	11/06/15
Freon 113	ND	9.7	0.85	1.050	229043	11/04/15
1,1-Dichloroethene	ND	9.7	1.8	1.050	229043	11/04/15
Methylene Chloride	10 J	39	2.2	1.050	229043	11/04/15
Carbon Disulfide	3.1 J	9.7	1.7	1.050	229043	11/04/15
MTBE	ND	9.7	1.9	1.050	229043	11/04/15
trans-1,2-Dichloroethene	ND	9.7	1.6	1.050	229043	11/04/15
Vinyl Acetate	ND	97	1.4	1.050	229043	11/04/15
1,1-Dichloroethane	ND	9.7	2.2	1.050	229043	11/04/15
2-Butanone	14 J	19	2.6	1.050	229043	11/04/15
cis-1,2-Dichloroethene	ND	9.7	1.7	1.050	229043	11/04/15
2,2-Dichloropropane	ND	9.7	2.1	1.050	229043	11/04/15
Chloroform	ND	9.7	2.5	1.050	229043	11/04/15
Bromochloromethane	ND	9.7	1.8	1.050	229043	11/04/15
1,1,1-Trichloroethane	ND	9.7	1.6	1.050	229043	11/04/15
1,1-Dichloropropene	ND	9.7	1.2	1.050	229043	11/04/15
Carbon Tetrachloride	ND	9.7	0.93	1.050	229043	11/04/15
1,2-Dichloroethane	ND	9.7	1.8	1.050	229043	11/04/15
Benzene	ND	9.7	1.8	1.050	229043	11/04/15
Trichloroethene	ND	9.7	1.6	1.050	229043	11/04/15
1,2-Dichloropropane	ND	9.7	1.5	1.050	229043	11/04/15
Bromodichloromethane	ND	9.7	1.6	1.050	229043	11/04/15
Dibromomethane	ND	9.7	1.5	1.050	229043	11/04/15
4-Methyl-2-Pentanone	ND	19	2.0	1.050	229043	11/04/15
cis-1,3-Dichloropropene	ND	9.7	1.2	1.050	229043	11/04/15
Toluene	7.1 J	9.7	1.4	1.050	229043	11/04/15
trans-1,3-Dichloropropene	ND	9.7	1.3	1.050	229043	11/04/15
1,1,2-Trichloroethane	ND	9.7	1.2	1.050	229043	11/04/15
2-Hexanone	ND	19	1.7	1.050	229043	11/04/15
1,3-Dichloropropane	ND	9.7	1.6	1.050	229043	11/04/15
Tetrachloroethene	ND	9.7	1.0	1.050	229043	11/04/15
Dibromochloromethane	ND	9.7	1.0	1.050	229043	11/04/15
1,2-Dibromoethane	ND	9.7	1.3	1.050	229043	11/04/15
Chlorobenzene	ND	9.7	1.3	1.050	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	9.7	1.2	1.050	229043	11/04/15
Ethylbenzene	ND	9.7	1.3	1.050	229043	11/04/15
m,p-Xylenes	ND	9.7	2.4	1.050	229043	11/04/15
o-Xylene	ND	9.7	1.2	1.050	229043	11/04/15
Styrene	ND	9.7	1.1	1.050	229043	11/04/15
Bromoform	ND	9.7	0.76	1.050	229043	11/04/15
Isopropylbenzene	ND	9.7	0.97	1.050	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	9.7	0.80	1.050	229043	11/04/15
1,2,3-Trichloropropane	ND	9.7	1.1	1.050	229043	11/04/15
Propylbenzene	ND	9.7	0.87	1.050	229043	11/04/15

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-08-04.0	Basis:	dry
Lab ID:	271270-014	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Bromobenzene	ND	9.7	1.0	1.050	229043	11/04/15
1,3,5-Trimethylbenzene	ND	9.7	1.1	1.050	229043	11/04/15
2-Chlorotoluene	ND	9.7	1.3	1.050	229043	11/04/15
4-Chlorotoluene	ND	9.7	1.3	1.050	229043	11/04/15
tert-Butylbenzene	ND	9.7	0.78	1.050	229043	11/04/15
1,2,4-Trimethylbenzene	ND	9.7	1.2	1.050	229043	11/04/15
sec-Butylbenzene	ND	9.7	0.81	1.050	229043	11/04/15
para-Isopropyl Toluene	ND	9.7	0.82	1.050	229043	11/04/15
1,3-Dichlorobenzene	ND	9.7	0.86	1.050	229043	11/04/15
1,4-Dichlorobenzene	ND	9.7	1.1	1.050	229043	11/04/15
n-Butylbenzene	ND	9.7	0.74	1.050	229043	11/04/15
1,2-Dichlorobenzene	ND	9.7	1.0	1.050	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	9.7	1.8	1.050	229043	11/04/15
1,2,4-Trichlorobenzene	ND	9.7	0.81	1.050	229043	11/04/15
Hexachlorobutadiene	ND	9.7	0.58	1.050	229043	11/04/15
Naphthalene	ND	9.7	1.9	1.050	229043	11/04/15
1,2,3-Trichlorobenzene	ND	9.7	0.83	1.050	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	108	78-134	1.050	229043	11/04/15
1,2-Dichloroethane-d4	141 *	80-138	1.050	229043	11/04/15
Toluene-d8	104	80-120	1.050	229043	11/04/15
Bromofluorobenzene	101	78-123	1.050	229043	11/04/15

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-02-02.0	Basis:	dry
Lab ID:	271270-015	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 33%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	14	0.57	0.9597	229043	11/04/15
Chloromethane	ND	14	1.5	0.9597	229043	11/04/15
Vinyl Chloride	ND	14	1.3	0.9597	229043	11/04/15
Bromomethane	ND	14	1.7	0.9597	229043	11/04/15
Chloroethane	ND	14	0.71	0.9597	229043	11/04/15
Trichlorofluoromethane	ND	7.2	1.0	0.9597	229043	11/04/15
Acetone	140	25	4.2	0.8475	229152	11/06/15
Freon 113	ND	7.2	0.63	0.9597	229043	11/04/15
1,1-Dichloroethene	ND	7.2	1.3	0.9597	229043	11/04/15
Methylene Chloride	ND	29	1.6	0.9597	229043	11/04/15
Carbon Disulfide	ND	7.2	1.2	0.9597	229043	11/04/15
MTBE	ND	7.2	1.4	0.9597	229043	11/04/15
trans-1,2-Dichloroethene	ND	7.2	1.2	0.9597	229043	11/04/15
Vinyl Acetate	ND	72	1.0	0.9597	229043	11/04/15
1,1-Dichloroethane	ND	7.2	1.7	0.9597	229043	11/04/15
2-Butanone	13 J	14	1.9	0.9597	229043	11/04/15
cis-1,2-Dichloroethene	ND	7.2	1.2	0.9597	229043	11/04/15
2,2-Dichloropropane	ND	7.2	1.5	0.9597	229043	11/04/15
Chloroform	ND	7.2	1.8	0.9597	229043	11/04/15
Bromochloromethane	ND	7.2	1.3	0.9597	229043	11/04/15
1,1,1-Trichloroethane	ND	7.2	1.2	0.9597	229043	11/04/15
1,1-Dichloropropene	ND	7.2	0.90	0.9597	229043	11/04/15
Carbon Tetrachloride	ND	7.2	0.68	0.9597	229043	11/04/15
1,2-Dichloroethane	ND	7.2	1.3	0.9597	229043	11/04/15
Benzene	ND	7.2	1.3	0.9597	229043	11/04/15
Trichloroethene	ND	7.2	1.2	0.9597	229043	11/04/15
1,2-Dichloropropane	ND	7.2	1.1	0.9597	229043	11/04/15
Bromodichloromethane	ND	7.2	1.2	0.9597	229043	11/04/15
Dibromomethane	ND	7.2	1.1	0.9597	229043	11/04/15
4-Methyl-2-Pentanone	ND	14	1.5	0.9597	229043	11/04/15
cis-1,3-Dichloropropene	ND	7.2	0.87	0.9597	229043	11/04/15
Toluene	ND	7.2	1.0	0.9597	229043	11/04/15
trans-1,3-Dichloropropene	ND	7.2	0.93	0.9597	229043	11/04/15
1,1,2-Trichloroethane	ND	7.2	0.89	0.9597	229043	11/04/15
2-Hexanone	ND	14	1.3	0.9597	229043	11/04/15
1,3-Dichloropropane	ND	7.2	1.2	0.9597	229043	11/04/15
Tetrachloroethene	ND	7.2	0.75	0.9597	229043	11/04/15
Dibromochloromethane	ND	7.2	0.74	0.9597	229043	11/04/15
1,2-Dibromoethane	ND	7.2	0.93	0.9597	229043	11/04/15
Chlorobenzene	ND	7.2	0.98	0.9597	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	7.2	0.89	0.9597	229043	11/04/15
Ethylbenzene	ND	7.2	0.97	0.9597	229043	11/04/15
m,p-Xylenes	ND	7.2	1.8	0.9597	229043	11/04/15
o-Xylene	ND	7.2	0.90	0.9597	229043	11/04/15
Styrene	ND	7.2	0.83	0.9597	229043	11/04/15
Bromoform	ND	7.2	0.56	0.9597	229043	11/04/15
Isopropylbenzene	ND	7.2	0.72	0.9597	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	7.2	0.59	0.9597	229043	11/04/15
1,2,3-Trichloropropane	ND	7.2	0.83	0.9597	229043	11/04/15
Propylbenzene	ND	7.2	0.64	0.9597	229043	11/04/15
Bromobenzene	ND	7.2	0.76	0.9597	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-02-02.0	Basis:	dry
Lab ID:	271270-015	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	7.2	0.81	0.9597	229043	11/04/15
2-Chlorotoluene	ND	7.2	0.97	0.9597	229043	11/04/15
4-Chlorotoluene	ND	7.2	0.93	0.9597	229043	11/04/15
tert-Butylbenzene	ND	7.2	0.58	0.9597	229043	11/04/15
1,2,4-Trimethylbenzene	ND	7.2	0.86	0.9597	229043	11/04/15
sec-Butylbenzene	ND	7.2	0.60	0.9597	229043	11/04/15
para-Isopropyl Toluene	ND	7.2	0.61	0.9597	229043	11/04/15
1,3-Dichlorobenzene	ND	7.2	0.63	0.9597	229043	11/04/15
1,4-Dichlorobenzene	ND	7.2	0.77	0.9597	229043	11/04/15
n-Butylbenzene	ND	7.2	0.54	0.9597	229043	11/04/15
1,2-Dichlorobenzene	ND	7.2	0.76	0.9597	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	7.2	1.3	0.9597	229043	11/04/15
1,2,4-Trichlorobenzene	ND	7.2	0.60	0.9597	229043	11/04/15
Hexachlorobutadiene	ND	7.2	0.43	0.9597	229043	11/04/15
Naphthalene	ND	7.2	1.4	0.9597	229043	11/04/15
1,2,3-Trichlorobenzene	ND	7.2	0.61	0.9597	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	113	78-134	0.9597	229043	11/04/15
1,2-Dichloroethane-d4	136	80-138	0.9597	229043	11/04/15
Toluene-d8	98	80-120	0.9597	229043	11/04/15
Bromofluorobenzene	98	78-123	0.9597	229043	11/04/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-02-04.0	Basis:	dry
Lab ID:	271270-016	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 36%

Analyte	Result	RL	MDL	Dil'n Fac	Batch#	Analyzed
Freon 12	ND	22	0.87	1.397	229043	11/04/15
Chloromethane	ND	22	2.3	1.397	229043	11/04/15
Vinyl Chloride	ND	22	2.0	1.397	229043	11/04/15
Bromomethane	ND	22	2.6	1.397	229043	11/04/15
Chloroethane	ND	22	1.1	1.397	229043	11/04/15
Trichlorofluoromethane	ND	11	1.5	1.397	229043	11/04/15
Acetone	120	34	5.6	1.082	229152	11/06/15
Freon 113	ND	11	0.96	1.397	229043	11/04/15
1,1-Dichloroethene	ND	11	2.1	1.397	229043	11/04/15
Methylene Chloride	ND	44	2.4	1.397	229043	11/04/15
Carbon Disulfide	2.5 J	11	1.9	1.397	229043	11/04/15
MTBE	ND	11	2.2	1.397	229043	11/04/15
trans-1,2-Dichloroethene	ND	11	1.8	1.397	229043	11/04/15
Vinyl Acetate	ND	110	1.6	1.397	229043	11/04/15
1,1-Dichloroethane	ND	11	2.5	1.397	229043	11/04/15
2-Butanone	28	22	2.9	1.397	229043	11/04/15
cis-1,2-Dichloroethene	ND	11	1.9	1.397	229043	11/04/15
2,2-Dichloropropane	ND	11	2.4	1.397	229043	11/04/15
Chloroform	ND	11	2.8	1.397	229043	11/04/15
Bromochloromethane	ND	11	2.0	1.397	229043	11/04/15
1,1,1-Trichloroethane	ND	11	1.8	1.397	229043	11/04/15
1,1-Dichloropropene	ND	11	1.4	1.397	229043	11/04/15
Carbon Tetrachloride	ND	11	1.0	1.397	229043	11/04/15
1,2-Dichloroethane	ND	11	2.0	1.397	229043	11/04/15
Benzene	ND	11	2.0	1.397	229043	11/04/15
Trichloroethene	ND	11	1.8	1.397	229043	11/04/15
1,2-Dichloropropane	ND	11	1.7	1.397	229043	11/04/15
Bromodichloromethane	ND	11	1.8	1.397	229043	11/04/15
Dibromomethane	ND	11	1.7	1.397	229043	11/04/15
4-Methyl-2-Pentanone	ND	22	2.2	1.397	229043	11/04/15
cis-1,3-Dichloropropene	ND	11	1.3	1.397	229043	11/04/15
Toluene	ND	11	1.6	1.397	229043	11/04/15
trans-1,3-Dichloropropene	ND	11	1.4	1.397	229043	11/04/15
1,1,2-Trichloroethane	ND	11	1.4	1.397	229043	11/04/15
2-Hexanone	ND	22	1.9	1.397	229043	11/04/15
1,3-Dichloropropane	ND	11	1.8	1.397	229043	11/04/15
Tetrachloroethene	ND	11	1.1	1.397	229043	11/04/15
Dibromochloromethane	ND	11	1.1	1.397	229043	11/04/15
1,2-Dibromoethane	ND	11	1.4	1.397	229043	11/04/15
Chlorobenzene	ND	11	1.5	1.397	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	11	1.4	1.397	229043	11/04/15
Ethylbenzene	ND	11	1.5	1.397	229043	11/04/15
m,p-Xylenes	ND	11	2.7	1.397	229043	11/04/15
o-Xylene	ND	11	1.4	1.397	229043	11/04/15
Styrene	ND	11	1.3	1.397	229043	11/04/15
Bromoform	ND	11	0.86	1.397	229043	11/04/15
Isopropylbenzene	ND	11	1.1	1.397	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	11	0.89	1.397	229043	11/04/15
1,2,3-Trichloropropane	ND	11	1.3	1.397	229043	11/04/15
Propylbenzene	ND	11	0.97	1.397	229043	11/04/15

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-02-04.0	Basis:	dry
Lab ID:	271270-016	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Bromobenzene	ND	11	1.2	1.397	229043	11/04/15
1,3,5-Trimethylbenzene	ND	11	1.2	1.397	229043	11/04/15
2-Chlorotoluene	ND	11	1.5	1.397	229043	11/04/15
4-Chlorotoluene	ND	11	1.4	1.397	229043	11/04/15
tert-Butylbenzene	ND	11	0.88	1.397	229043	11/04/15
1,2,4-Trimethylbenzene	ND	11	1.3	1.397	229043	11/04/15
sec-Butylbenzene	ND	11	0.91	1.397	229043	11/04/15
para-Isopropyl Toluene	ND	11	0.93	1.397	229043	11/04/15
1,3-Dichlorobenzene	ND	11	0.96	1.397	229043	11/04/15
1,4-Dichlorobenzene	ND	11	1.2	1.397	229043	11/04/15
n-Butylbenzene	ND	11	0.83	1.397	229043	11/04/15
1,2-Dichlorobenzene	ND	11	1.2	1.397	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	11	2.0	1.397	229043	11/04/15
1,2,4-Trichlorobenzene	ND	11	0.91	1.397	229043	11/04/15
Hexachlorobutadiene	ND	11	0.65	1.397	229043	11/04/15
Naphthalene	ND	11	2.2	1.397	229043	11/04/15
1,2,3-Trichlorobenzene	ND	11	0.93	1.397	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	114	78-134	1.397	229043	11/04/15
1,2-Dichloroethane-d4	139 *	80-138	1.397	229043	11/04/15
Toluene-d8	97	80-120	1.397	229043	11/04/15
Bromofluorobenzene	97	78-123	1.397	229043	11/04/15

*= Value outside of QC limits; see narrative
J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-01-02.0	Basis:	dry
Lab ID:	271270-017	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 31%

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Freon 12	ND	14	0.58	0.9960	229199	11/08/15
Chloromethane	ND	14	1.5	0.9960	229199	11/08/15
Vinyl Chloride	ND	14	1.3	0.9960	229199	11/08/15
Bromomethane	ND	14	1.7	0.9960	229199	11/08/15
Chloroethane	ND	14	0.72	0.9960	229199	11/08/15
Trichlorofluoromethane	ND	7.2	1.0	0.9960	229199	11/08/15
Acetone	660 J	2,900	480	100.1	229231	11/10/15
Freon 113	ND	7.2	0.63	0.9960	229199	11/08/15
1,1-Dichloroethene	ND	7.2	1.4	0.9960	229199	11/08/15
Methylene Chloride	ND	29	1.6	0.9960	229199	11/08/15
Carbon Disulfide	1.6 J	7.2	1.3	0.9960	229199	11/08/15
MTBE	ND	7.2	1.4	0.9960	229199	11/08/15
trans-1,2-Dichloroethene	ND	7.2	1.2	0.9960	229199	11/08/15
Vinyl Acetate	ND	72	1.0	0.9960	229199	11/08/15
1,1-Dichloroethane	ND	7.2	1.7	0.9960	229199	11/08/15
2-Butanone	29	14	1.9	0.9960	229199	11/08/15
cis-1,2-Dichloroethene	ND	7.2	1.3	0.9960	229199	11/08/15
2,2-Dichloropropane	ND	7.2	1.6	0.9960	229199	11/08/15
Chloroform	ND	7.2	1.8	0.9960	229199	11/08/15
Bromochloromethane	ND	7.2	1.3	0.9960	229199	11/08/15
1,1,1-Trichloroethane	ND	7.2	1.2	0.9960	229199	11/08/15
1,1-Dichloropropene	ND	7.2	0.91	0.9960	229199	11/08/15
Carbon Tetrachloride	ND	7.2	0.69	0.9960	229199	11/08/15
1,2-Dichloroethane	ND	7.2	1.3	0.9960	229199	11/08/15
Benzene	ND	7.2	1.3	0.9960	229199	11/08/15
Trichloroethene	ND	7.2	1.2	0.9960	229199	11/08/15
1,2-Dichloropropane	ND	7.2	1.1	0.9960	229199	11/08/15
Bromodichloromethane	ND	7.2	1.2	0.9960	229199	11/08/15
Dibromomethane	ND	7.2	1.1	0.9960	229199	11/08/15
4-Methyl-2-Pentanone	ND	14	1.5	0.9960	229199	11/08/15
cis-1,3-Dichloropropene	ND	7.2	0.87	0.9960	229199	11/08/15
Toluene	ND	7.2	1.0	0.9960	229199	11/08/15
trans-1,3-Dichloropropene	ND	7.2	0.94	0.9960	229199	11/08/15
1,1,2-Trichloroethane	ND	7.2	0.90	0.9960	229199	11/08/15
2-Hexanone	ND	14	1.3	0.9960	229199	11/08/15
1,3-Dichloropropane	ND	7.2	1.2	0.9960	229199	11/08/15
Tetrachloroethene	ND	7.2	0.76	0.9960	229199	11/08/15
Dibromochloromethane	ND	7.2	0.74	0.9960	229199	11/08/15
1,2-Dibromoethane	ND	7.2	0.94	0.9960	229199	11/08/15
Chlorobenzene	ND	7.2	0.99	0.9960	229199	11/08/15
1,1,1,2-Tetrachloroethane	ND	7.2	0.89	0.9960	229199	11/08/15
Ethylbenzene	ND	7.2	0.98	0.9960	229199	11/08/15
m,p-Xylenes	ND	7.2	1.8	0.9960	229199	11/08/15
o-Xylene	ND	7.2	0.90	0.9960	229199	11/08/15
Styrene	ND	7.2	0.83	0.9960	229199	11/08/15
Bromoform	ND	7.2	0.57	0.9960	229199	11/08/15
Isopropylbenzene	ND	7.2	0.72	0.9960	229199	11/08/15
1,1,2,2-Tetrachloroethane	ND	7.2	0.59	0.9960	229199	11/08/15
1,2,3-Trichloropropane	ND	7.2	0.84	0.9960	229199	11/08/15
Propylbenzene	ND	7.2	0.64	0.9960	229199	11/08/15
Bromobenzene	ND	7.2	0.77	0.9960	229199	11/08/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-01-02.0	Basis:	dry
Lab ID:	271270-017	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	7.2	0.82	0.9960	229199	11/08/15
2-Chlorotoluene	ND	7.2	0.98	0.9960	229199	11/08/15
4-Chlorotoluene	ND	7.2	0.93	0.9960	229199	11/08/15
tert-Butylbenzene	ND	7.2	0.58	0.9960	229199	11/08/15
1,2,4-Trimethylbenzene	ND	7.2	0.87	0.9960	229199	11/08/15
sec-Butylbenzene	ND	7.2	0.60	0.9960	229199	11/08/15
para-Isopropyl Toluene	ND	7.2	0.61	0.9960	229199	11/08/15
1,3-Dichlorobenzene	ND	7.2	0.64	0.9960	229199	11/08/15
1,4-Dichlorobenzene	ND	7.2	0.78	0.9960	229199	11/08/15
n-Butylbenzene	ND	7.2	0.55	0.9960	229199	11/08/15
1,2-Dichlorobenzene	ND	7.2	0.77	0.9960	229199	11/08/15
1,2-Dibromo-3-Chloropropane	ND	7.2	1.4	0.9960	229199	11/08/15
1,2,4-Trichlorobenzene	ND	7.2	0.60	0.9960	229199	11/08/15
Hexachlorobutadiene	ND	7.2	0.43	0.9960	229199	11/08/15
Naphthalene	ND	7.2	1.4	0.9960	229199	11/08/15
1,2,3-Trichlorobenzene	ND	7.2	0.62	0.9960	229199	11/08/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	119	78-134	0.9960	229199	11/08/15
1,2-Dichloroethane-d4	138	80-138	0.9960	229199	11/08/15
Toluene-d8	95	80-120	0.9960	229199	11/08/15
Bromofluorobenzene	98	78-123	0.9960	229199	11/08/15

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-01-04.0	Basis:	dry
Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Moisture: 24%

Analyte	Result	RL	MDL	Dil'n Fac	Batch#	Analyzed
Freon 12	ND	14	0.56	1.075	229043	11/04/15
Chloromethane	ND	14	1.5	1.075	229043	11/04/15
Vinyl Chloride	ND	14	1.3	1.075	229043	11/04/15
Bromomethane	ND	14	1.7	1.075	229043	11/04/15
Chloroethane	ND	14	0.70	1.075	229043	11/04/15
Trichlorofluoromethane	ND	7.1	0.98	1.075	229043	11/04/15
Acetone	130	37	6.1	1.408	229152	11/06/15
Freon 113	ND	7.1	0.62	1.075	229043	11/04/15
1,1-Dichloroethene	ND	7.1	1.3	1.075	229043	11/04/15
Methylene Chloride	ND	28	1.6	1.075	229043	11/04/15
Carbon Disulfide	ND	7.1	1.2	1.075	229043	11/04/15
MTBE	ND	7.1	1.4	1.075	229043	11/04/15
trans-1,2-Dichloroethene	ND	7.1	1.2	1.075	229043	11/04/15
Vinyl Acetate	ND	71	1.0	1.075	229043	11/04/15
1,1-Dichloroethane	ND	7.1	1.6	1.075	229043	11/04/15
2-Butanone	17	14	1.9	1.075	229043	11/04/15
cis-1,2-Dichloroethene	ND	7.1	1.2	1.075	229043	11/04/15
2,2-Dichloropropane	ND	7.1	1.5	1.075	229043	11/04/15
Chloroform	ND	7.1	1.8	1.075	229043	11/04/15
Bromochloromethane	ND	7.1	1.3	1.075	229043	11/04/15
1,1,1-Trichloroethane	ND	7.1	1.1	1.075	229043	11/04/15
1,1-Dichloropropene	ND	7.1	0.89	1.075	229043	11/04/15
Carbon Tetrachloride	ND	7.1	0.68	1.075	229043	11/04/15
1,2-Dichloroethane	ND	7.1	1.3	1.075	229043	11/04/15
Benzene	ND	7.1	1.3	1.075	229043	11/04/15
Trichloroethene	ND	7.1	1.2	1.075	229043	11/04/15
1,2-Dichloropropane	ND	7.1	1.1	1.075	229043	11/04/15
Bromodichloromethane	ND	7.1	1.2	1.075	229043	11/04/15
Dibromomethane	ND	7.1	1.1	1.075	229043	11/04/15
4-Methyl-2-Pentanone	ND	14	1.4	1.075	229043	11/04/15
cis-1,3-Dichloropropene	ND	7.1	0.86	1.075	229043	11/04/15
Toluene	ND	7.1	1.0	1.075	229043	11/04/15
trans-1,3-Dichloropropene	ND	7.1	0.92	1.075	229043	11/04/15
1,1,2-Trichloroethane	ND	7.1	0.88	1.075	229043	11/04/15
2-Hexanone	ND	14	1.2	1.075	229043	11/04/15
1,3-Dichloropropane	ND	7.1	1.2	1.075	229043	11/04/15
Tetrachloroethene	ND	7.1	0.74	1.075	229043	11/04/15
Dibromochloromethane	ND	7.1	0.73	1.075	229043	11/04/15
1,2-Dibromoethane	ND	7.1	0.92	1.075	229043	11/04/15
Chlorobenzene	ND	7.1	0.97	1.075	229043	11/04/15
1,1,1,2-Tetrachloroethane	ND	7.1	0.88	1.075	229043	11/04/15
Ethylbenzene	ND	7.1	0.96	1.075	229043	11/04/15
m,p-Xylenes	ND	7.1	1.8	1.075	229043	11/04/15
o-Xylene	ND	7.1	0.89	1.075	229043	11/04/15
Styrene	ND	7.1	0.82	1.075	229043	11/04/15
Bromoform	ND	7.1	0.56	1.075	229043	11/04/15
Isopropylbenzene	ND	7.1	0.71	1.075	229043	11/04/15
1,1,2,2-Tetrachloroethane	ND	7.1	0.58	1.075	229043	11/04/15
1,2,3-Trichloropropane	ND	7.1	0.82	1.075	229043	11/04/15
Propylbenzene	ND	7.1	0.63	1.075	229043	11/04/15
Bromobenzene	ND	7.1	0.75	1.075	229043	11/04/15

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-01-04.0	Basis:	dry
Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
1,3,5-Trimethylbenzene	ND	7.1	0.80	1.075	229043	11/04/15
2-Chlorotoluene	ND	7.1	0.96	1.075	229043	11/04/15
4-Chlorotoluene	ND	7.1	0.91	1.075	229043	11/04/15
tert-Butylbenzene	ND	7.1	0.57	1.075	229043	11/04/15
1,2,4-Trimethylbenzene	ND	7.1	0.85	1.075	229043	11/04/15
sec-Butylbenzene	ND	7.1	0.59	1.075	229043	11/04/15
para-Isopropyl Toluene	ND	7.1	0.60	1.075	229043	11/04/15
1,3-Dichlorobenzene	ND	7.1	0.63	1.075	229043	11/04/15
1,4-Dichlorobenzene	ND	7.1	0.76	1.075	229043	11/04/15
n-Butylbenzene	ND	7.1	0.54	1.075	229043	11/04/15
1,2-Dichlorobenzene	ND	7.1	0.75	1.075	229043	11/04/15
1,2-Dibromo-3-Chloropropane	ND	7.1	1.3	1.075	229043	11/04/15
1,2,4-Trichlorobenzene	ND	7.1	0.59	1.075	229043	11/04/15
Hexachlorobutadiene	ND	7.1	0.42	1.075	229043	11/04/15
Naphthalene	ND	7.1	1.4	1.075	229043	11/04/15
1,2,3-Trichlorobenzene	ND	7.1	0.60	1.075	229043	11/04/15

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	113	78-134	1.075	229043	11/04/15
1,2-Dichloroethane-d4	143 *	80-138	1.075	229043	11/04/15
Toluene-d8	99	80-120	1.075	229043	11/04/15
Bromofluorobenzene	100	78-123	1.075	229043	11/04/15

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-10-02.0	Diln Fac:	0.9804
Lab ID:	271270-019	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 38%

Analyte	Result	RL	MDL
Freon 12	ND	16	0.63
Chloromethane	ND	16	1.6
Vinyl Chloride	ND	16	1.5
Bromomethane	ND	16	1.8
Chloroethane	ND	16	0.79
Trichlorofluoromethane	ND	7.9	1.1
Acetone	94	32	5.2
Freon 113	ND	7.9	0.69
1,1-Dichloroethene	ND	7.9	1.5
Methylene Chloride	ND	32	1.8
Carbon Disulfide	12	7.9	1.4
MTBE	ND	7.9	1.6
trans-1,2-Dichloroethene	ND	7.9	1.3
Vinyl Acetate	ND	79	1.1
1,1-Dichloroethane	ND	7.9	1.8
2-Butanone	7.4 J	16	2.1
cis-1,2-Dichloroethene	ND	7.9	1.4
2,2-Dichloropropane	ND	7.9	1.7
Chloroform	ND	7.9	2.0
Bromochloromethane	ND	7.9	1.5
1,1,1-Trichloroethane	ND	7.9	1.3
1,1-Dichloropropene	ND	7.9	0.99
Carbon Tetrachloride	ND	7.9	0.75
1,2-Dichloroethane	ND	7.9	1.5
Benzene	ND	7.9	1.4
Trichloroethene	ND	7.9	1.3
1,2-Dichloropropane	ND	7.9	1.2
Bromodichloromethane	ND	7.9	1.3
Dibromomethane	ND	7.9	1.2
4-Methyl-2-Pentanone	ND	16	1.6
cis-1,3-Dichloropropene	ND	7.9	0.96
Toluene	ND	7.9	1.1
trans-1,3-Dichloropropene	ND	7.9	1.0
1,1,2-Trichloroethane	ND	7.9	0.98
2-Hexanone	ND	16	1.4
1,3-Dichloropropane	ND	7.9	1.3
Tetrachloroethene	ND	7.9	0.83
Dibromochloromethane	ND	7.9	0.81
1,2-Dibromoethane	ND	7.9	1.0
Chlorobenzene	ND	7.9	1.1
1,1,1,2-Tetrachloroethane	ND	7.9	0.98
Ethylbenzene	ND	7.9	1.1
m,p-Xylenes	ND	7.9	2.0
o-Xylene	ND	7.9	0.99
Styrene	ND	7.9	0.91
Bromoform	ND	7.9	0.62
Isopropylbenzene	ND	7.9	0.79
1,1,2,2-Tetrachloroethane	ND	7.9	0.65
1,2,3-Trichloropropane	ND	7.9	0.92
Propylbenzene	ND	7.9	0.70

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-10-02.0	Dil'n Fac:	0.9804
Lab ID:	271270-019	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
Bromobenzene	ND	7.9	0.84
1,3,5-Trimethylbenzene	ND	7.9	0.90
2-Chlorotoluene	ND	7.9	1.1
4-Chlorotoluene	ND	7.9	1.0
tert-Butylbenzene	ND	7.9	0.64
1,2,4-Trimethylbenzene	ND	7.9	0.95
sec-Butylbenzene	ND	7.9	0.66
para-Isopropyl Toluene	ND	7.9	0.67
1,3-Dichlorobenzene	ND	7.9	0.70
1,4-Dichlorobenzene	ND	7.9	0.85
n-Butylbenzene	ND	7.9	0.60
1,2-Dichlorobenzene	ND	7.9	0.84
1,2-Dibromo-3-Chloropropane	ND	7.9	1.5
1,2,4-Trichlorobenzene	ND	7.9	0.66
Hexachlorobutadiene	ND	7.9	0.47
Naphthalene	ND	7.9	1.6
1,2,3-Trichlorobenzene	ND	7.9	0.68

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	137	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	99	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-09-01.0	Diln Fac:	0.8757
Lab ID:	271270-020	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 42%

Analyte	Result	RL	MDL
Freon 12	ND	15	0.60
Chloromethane	ND	15	1.6
Vinyl Chloride	ND	15	1.4
Bromomethane	ND	15	1.8
Chloroethane	ND	15	0.75
Trichlorofluoromethane	ND	7.5	1.1
Acetone	100	30	5.0
Freon 113	ND	7.5	0.66
1,1-Dichloroethene	ND	7.5	1.4
Methylene Chloride	ND	30	1.7
Carbon Disulfide	ND	7.5	1.3
MTBE	ND	7.5	1.5
trans-1,2-Dichloroethene	ND	7.5	1.3
Vinyl Acetate	ND	75	1.1
1,1-Dichloroethane	ND	7.5	1.7
2-Butanone	16	15	2.0
cis-1,2-Dichloroethene	ND	7.5	1.3
2,2-Dichloropropane	ND	7.5	1.6
Chloroform	ND	7.5	1.9
Bromochloromethane	ND	7.5	1.4
1,1,1-Trichloroethane	ND	7.5	1.2
1,1-Dichloropropene	ND	7.5	0.95
Carbon Tetrachloride	ND	7.5	0.72
1,2-Dichloroethane	ND	7.5	1.4
Benzene	ND	7.5	1.4
Trichloroethene	ND	7.5	1.3
1,2-Dichloropropane	ND	7.5	1.2
Bromodichloromethane	ND	7.5	1.3
Dibromomethane	ND	7.5	1.2
4-Methyl-2-Pentanone	ND	15	1.5
cis-1,3-Dichloropropene	ND	7.5	0.91
Toluene	ND	7.5	1.1
trans-1,3-Dichloropropene	ND	7.5	0.98
1,1,2-Trichloroethane	ND	7.5	0.94
2-Hexanone	ND	15	1.3
1,3-Dichloropropane	ND	7.5	1.3
Tetrachloroethene	ND	7.5	0.79
Dibromochloromethane	ND	7.5	0.78
1,2-Dibromoethane	ND	7.5	0.98
Chlorobenzene	ND	7.5	1.0
1,1,1,2-Tetrachloroethane	ND	7.5	0.94
Ethylbenzene	ND	7.5	1.0
m,p-Xylenes	ND	7.5	1.9
o-Xylene	ND	7.5	0.95
Styrene	ND	7.5	0.87
Bromoform	ND	7.5	0.59
Isopropylbenzene	ND	7.5	0.76
1,1,2,2-Tetrachloroethane	ND	7.5	0.62
1,2,3-Trichloropropane	ND	7.5	0.88
Propylbenzene	ND	7.5	0.67

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-09-01.0	Dil'n Fac:	0.8757
Lab ID:	271270-020	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
Bromobenzene	ND	7.5	0.80
1,3,5-Trimethylbenzene	ND	7.5	0.86
2-Chlorotoluene	ND	7.5	1.0
4-Chlorotoluene	ND	7.5	0.98
tert-Butylbenzene	ND	7.5	0.61
1,2,4-Trimethylbenzene	ND	7.5	0.91
sec-Butylbenzene	ND	7.5	0.63
para-Isopropyl Toluene	ND	7.5	0.64
1,3-Dichlorobenzene	ND	7.5	0.67
1,4-Dichlorobenzene	ND	7.5	0.82
n-Butylbenzene	ND	7.5	0.57
1,2-Dichlorobenzene	ND	7.5	0.80
1,2-Dibromo-3-Chloropropane	ND	7.5	1.4
1,2,4-Trichlorobenzene	ND	7.5	0.63
Hexachlorobutadiene	ND	7.5	0.45
Naphthalene	ND	7.5	1.5
1,2,3-Trichlorobenzene	ND	7.5	0.64

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	142 *	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	93	78-123

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-09-04.5	Dil'n Fac:	0.7246
Lab ID:	271270-021	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 49%

Analyte	Result	RL	MDL
Freon 12	ND	14	0.57
Chloromethane	ND	14	1.5
Vinyl Chloride	ND	14	1.3
Bromomethane	ND	14	1.7
Chloroethane	ND	14	0.71
Trichlorofluoromethane	ND	7.1	0.99
Acetone	150	28	4.7
Freon 113	ND	7.1	0.62
1,1-Dichloroethene	ND	7.1	1.3
Methylene Chloride	ND	28	1.6
Carbon Disulfide	2.6 J	7.1	1.2
MTBE	ND	7.1	1.4
trans-1,2-Dichloroethene	ND	7.1	1.2
Vinyl Acetate	ND	71	1.0
1,1-Dichloroethane	ND	7.1	1.6
2-Butanone	23	14	1.9
cis-1,2-Dichloroethene	ND	7.1	1.2
2,2-Dichloropropane	ND	7.1	1.5
Chloroform	ND	7.1	1.8
Bromochloromethane	ND	7.1	1.3
1,1,1-Trichloroethane	ND	7.1	1.1
1,1-Dichloropropene	ND	7.1	0.89
Carbon Tetrachloride	ND	7.1	0.68
1,2-Dichloroethane	ND	7.1	1.3
Benzene	ND	7.1	1.3
Trichloroethene	ND	7.1	1.2
1,2-Dichloropropane	ND	7.1	1.1
Bromodichloromethane	ND	7.1	1.2
Dibromomethane	ND	7.1	1.1
4-Methyl-2-Pentanone	ND	14	1.4
cis-1,3-Dichloropropene	ND	7.1	0.86
Toluene	ND	7.1	1.0
trans-1,3-Dichloropropene	ND	7.1	0.92
1,1,2-Trichloroethane	ND	7.1	0.88
2-Hexanone	ND	14	1.2
1,3-Dichloropropane	ND	7.1	1.2
Tetrachloroethene	ND	7.1	0.74
Dibromochloromethane	ND	7.1	0.73
1,2-Dibromoethane	ND	7.1	0.92
Chlorobenzene	ND	7.1	0.97
1,1,1,2-Tetrachloroethane	ND	7.1	0.88
Ethylbenzene	ND	7.1	0.96
m,p-Xylenes	ND	7.1	1.8
o-Xylene	ND	7.1	0.89
Styrene	ND	7.1	0.82
Bromoform	ND	7.1	0.56
Isopropylbenzene	ND	7.1	0.71
1,1,2,2-Tetrachloroethane	ND	7.1	0.58
1,2,3-Trichloropropane	ND	7.1	0.82
Propylbenzene	ND	7.1	0.63

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-09-04.5	Dil'n Fac:	0.7246
Lab ID:	271270-021	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
Bromobenzene	ND	7.1	0.75
1,3,5-Trimethylbenzene	ND	7.1	0.81
2-Chlorotoluene	ND	7.1	0.96
4-Chlorotoluene	ND	7.1	0.92
tert-Butylbenzene	ND	7.1	0.57
1,2,4-Trimethylbenzene	ND	7.1	0.85
sec-Butylbenzene	ND	7.1	0.59
para-Isopropyl Toluene	ND	7.1	0.60
1,3-Dichlorobenzene	ND	7.1	0.63
1,4-Dichlorobenzene	ND	7.1	0.77
n-Butylbenzene	ND	7.1	0.54
1,2-Dichlorobenzene	ND	7.1	0.75
1,2-Dibromo-3-Chloropropane	ND	7.1	1.3
1,2,4-Trichlorobenzene	ND	7.1	0.59
Hexachlorobutadiene	ND	7.1	0.42
Naphthalene	ND	7.1	1.4
1,2,3-Trichlorobenzene	ND	7.1	0.61

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	131	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	96	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-12-15.0	Dil'n Fac:	1.002
Lab ID:	271270-022	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 49%

Analyte	Result	RL	MDL
Freon 12	ND	20	0.78
Chloromethane	ND	20	2.0
Vinyl Chloride	ND	20	1.8
Bromomethane	ND	20	2.3
Chloroethane	ND	20	0.98
Trichlorofluoromethane	ND	9.8	1.4
Acetone	95	39	6.5
Freon 113	ND	9.8	0.86
1,1-Dichloroethene	ND	9.8	1.8
Methylene Chloride	ND	39	2.2
Carbon Disulfide	14	9.8	1.7
MTBE	ND	9.8	2.0
trans-1,2-Dichloroethene	ND	9.8	1.6
Vinyl Acetate	ND	98	1.4
1,1-Dichloroethane	ND	9.8	2.3
2-Butanone	14 J	20	2.6
cis-1,2-Dichloroethene	ND	9.8	1.7
2,2-Dichloropropane	ND	9.8	2.1
Chloroform	ND	9.8	2.5
Bromochloromethane	ND	9.8	1.8
1,1,1-Trichloroethane	ND	9.8	1.6
1,1-Dichloropropene	ND	9.8	1.2
Carbon Tetrachloride	ND	9.8	0.94
1,2-Dichloroethane	ND	9.8	1.8
Benzene	ND	9.8	1.8
Trichloroethene	ND	9.8	1.6
1,2-Dichloropropane	ND	9.8	1.5
Bromodichloromethane	ND	9.8	1.7
Dibromomethane	ND	9.8	1.5
4-Methyl-2-Pentanone	ND	20	2.0
cis-1,3-Dichloropropene	ND	9.8	1.2
Toluene	ND	9.8	1.4
trans-1,3-Dichloropropene	ND	9.8	1.3
1,1,2-Trichloroethane	ND	9.8	1.2
2-Hexanone	ND	20	1.7
1,3-Dichloropropane	ND	9.8	1.7
Tetrachloroethene	ND	9.8	1.0
Dibromochloromethane	ND	9.8	1.0
1,2-Dibromoethane	ND	9.8	1.3
Chlorobenzene	ND	9.8	1.3
1,1,1,2-Tetrachloroethane	ND	9.8	1.2
Ethylbenzene	ND	9.8	1.3
m,p-Xylenes	ND	9.8	2.5
o-Xylene	ND	9.8	1.2
Styrene	ND	9.8	1.1
Bromoform	ND	9.8	0.77
Isopropylbenzene	ND	9.8	0.98
1,1,2,2-Tetrachloroethane	ND	9.8	0.80
1,2,3-Trichloropropane	ND	9.8	1.1
Propylbenzene	ND	9.8	0.88

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-12-15.0	Dil'n Fac:	1.002
Lab ID:	271270-022	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
Bromobenzene	ND	9.8	1.0
1,3,5-Trimethylbenzene	ND	9.8	1.1
2-Chlorotoluene	ND	9.8	1.3
4-Chlorotoluene	ND	9.8	1.3
tert-Butylbenzene	ND	9.8	0.79
1,2,4-Trimethylbenzene	ND	9.8	1.2
sec-Butylbenzene	ND	9.8	0.82
para-Isopropyl Toluene	ND	9.8	0.83
1,3-Dichlorobenzene	ND	9.8	0.87
1,4-Dichlorobenzene	ND	9.8	1.1
n-Butylbenzene	ND	9.8	0.75
1,2-Dichlorobenzene	ND	9.8	1.0
1,2-Dibromo-3-Chloropropane	ND	9.8	1.8
1,2,4-Trichlorobenzene	ND	9.8	0.82
Hexachlorobutadiene	ND	9.8	0.59
Naphthalene	ND	9.8	2.0
1,2,3-Trichlorobenzene	ND	9.8	0.84

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	136	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	96	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-12-25.0	Dil'n Fac:	1.053
Lab ID:	271270-023	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Moisture: 42%

Analyte	Result	RL	MDL
Freon 12	ND	18	0.72
Chloromethane	ND	18	1.9
Vinyl Chloride	ND	18	1.7
Bromomethane	ND	18	2.1
Chloroethane	ND	18	0.90
Trichlorofluoromethane	ND	9.1	1.3
Acetone	73	36	6.0
Freon 113	ND	9.1	0.80
1,1-Dichloroethene	ND	9.1	1.7
Methylene Chloride	ND	36	2.0
Carbon Disulfide	8.1 J	9.1	1.6
MTBE	ND	9.1	1.8
trans-1,2-Dichloroethene	ND	9.1	1.5
Vinyl Acetate	ND	91	1.3
1,1-Dichloroethane	ND	9.1	2.1
2-Butanone	12 J	18	2.4
cis-1,2-Dichloroethene	ND	9.1	1.6
2,2-Dichloropropane	ND	9.1	2.0
Chloroform	ND	9.1	2.3
Bromochloromethane	ND	9.1	1.7
1,1,1-Trichloroethane	ND	9.1	1.5
1,1-Dichloropropene	ND	9.1	1.1
Carbon Tetrachloride	ND	9.1	0.87
1,2-Dichloroethane	ND	9.1	1.7
Benzene	ND	9.1	1.6
Trichloroethene	ND	9.1	1.5
1,2-Dichloropropane	ND	9.1	1.4
Bromodichloromethane	ND	9.1	1.5
Dibromomethane	ND	9.1	1.4
4-Methyl-2-Pentanone	ND	18	1.8
cis-1,3-Dichloropropene	ND	9.1	1.1
Toluene	ND	9.1	1.3
trans-1,3-Dichloropropene	ND	9.1	1.2
1,1,2-Trichloroethane	ND	9.1	1.1
2-Hexanone	ND	18	1.6
1,3-Dichloropropane	ND	9.1	1.5
Tetrachloroethene	ND	9.1	0.95
Dibromochloromethane	ND	9.1	0.93
1,2-Dibromoethane	ND	9.1	1.2
Chlorobenzene	ND	9.1	1.2
1,1,1,2-Tetrachloroethane	ND	9.1	1.1
Ethylbenzene	ND	9.1	1.2
m,p-Xylenes	ND	9.1	2.3
o-Xylene	ND	9.1	1.1
Styrene	ND	9.1	1.0
Bromoform	ND	9.1	0.71
Isopropylbenzene	ND	9.1	0.91
1,1,2,2-Tetrachloroethane	ND	9.1	0.74
1,2,3-Trichloropropane	ND	9.1	1.1
Propylbenzene	ND	9.1	0.81

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-12-25.0	Dil'n Fac:	1.053
Lab ID:	271270-023	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Analyte	Result	RL	MDL
Bromobenzene	ND	9.1	0.96
1,3,5-Trimethylbenzene	ND	9.1	1.0
2-Chlorotoluene	ND	9.1	1.2
4-Chlorotoluene	ND	9.1	1.2
tert-Butylbenzene	ND	9.1	0.73
1,2,4-Trimethylbenzene	ND	9.1	1.1
sec-Butylbenzene	ND	9.1	0.76
para-Isopropyl Toluene	ND	9.1	0.77
1,3-Dichlorobenzene	ND	9.1	0.80
1,4-Dichlorobenzene	ND	9.1	0.98
n-Butylbenzene	ND	9.1	0.69
1,2-Dichlorobenzene	ND	9.1	0.96
1,2-Dibromo-3-Chloropropane	ND	9.1	1.7
1,2,4-Trichlorobenzene	ND	9.1	0.76
Hexachlorobutadiene	ND	9.1	0.54
Naphthalene	ND	9.1	1.8
1,2,3-Trichlorobenzene	ND	9.1	0.78

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-134
1,2-Dichloroethane-d4	126	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	97	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-11-15.0	Diln Fac:	0.9747
Lab ID:	271270-024	Batch#:	229231
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/09/15

Moisture: 46%

Analyte	Result	RL	MDL
Freon 12	ND	18	0.84
Chloromethane	ND	18	0.91
Vinyl Chloride	ND	18	0.84
Bromomethane	ND	18	1.9
Chloroethane	ND	18	1.4
Trichlorofluoromethane	ND	9.0	0.46
Acetone	76	36	6.0
Freon 113	ND	9.0	0.81
1,1-Dichloroethene	ND	9.0	0.79
Methylene Chloride	ND	36	0.81
Carbon Disulfide	11	9.0	0.86
MTBE	ND	9.0	0.28
trans-1,2-Dichloroethene	ND	9.0	1.1
Vinyl Acetate	ND	90	1.3
1,1-Dichloroethane	ND	9.0	0.67
2-Butanone	15 J	18	2.6
cis-1,2-Dichloroethene	ND	9.0	0.54
2,2-Dichloropropane	ND	9.0	0.65
Chloroform	ND	9.0	0.56
Bromochloromethane	ND	9.0	0.96
1,1,1-Trichloroethane	ND	9.0	0.72
1,1-Dichloropropene	ND	9.0	0.46
Carbon Tetrachloride	ND	9.0	0.88
1,2-Dichloroethane	ND	9.0	0.62
Benzene	ND	9.0	0.79
Trichloroethene	ND	9.0	0.76
1,2-Dichloropropane	ND	9.0	0.42
Bromodichloromethane	ND	9.0	0.44
Dibromomethane	ND	9.0	1.2
4-Methyl-2-Pentanone	ND	18	0.87
cis-1,3-Dichloropropene	ND	9.0	0.51
Toluene	ND	9.0	0.57
trans-1,3-Dichloropropene	ND	9.0	0.43
1,1,2-Trichloroethane	ND	9.0	0.67
2-Hexanone	ND	18	2.0
1,3-Dichloropropane	ND	9.0	0.40
Tetrachloroethene	ND	9.0	0.43
Dibromochloromethane	ND	9.0	0.51
1,2-Dibromoethane	ND	9.0	0.38
Chlorobenzene	ND	9.0	0.71
1,1,1,2-Tetrachloroethane	ND	9.0	0.49
Ethylbenzene	ND	9.0	0.68
m,p-Xylenes	ND	9.0	1.6
o-Xylene	ND	9.0	0.49
Styrene	ND	9.0	0.52
Bromoform	ND	9.0	0.85
Isopropylbenzene	ND	9.0	0.53
1,1,2,2-Tetrachloroethane	ND	9.0	0.78
1,2,3-Trichloropropane	ND	9.0	0.45
Propylbenzene	ND	9.0	0.56

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-11-15.0	Dil'n Fac:	0.9747
Lab ID:	271270-024	Batch#:	229231
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/09/15

Analyte	Result	RL	MDL
Bromobenzene	ND	9.0	0.77
1,3,5-Trimethylbenzene	ND	9.0	0.58
2-Chlorotoluene	ND	9.0	0.70
4-Chlorotoluene	ND	9.0	0.83
tert-Butylbenzene	ND	9.0	0.69
1,2,4-Trimethylbenzene	ND	9.0	0.51
sec-Butylbenzene	ND	9.0	0.46
para-Isopropyl Toluene	ND	9.0	0.63
1,3-Dichlorobenzene	ND	9.0	0.77
1,4-Dichlorobenzene	ND	9.0	0.71
n-Butylbenzene	ND	9.0	0.66
1,2-Dichlorobenzene	ND	9.0	0.51
1,2-Dibromo-3-Chloropropane	ND	9.0	1.8
1,2,4-Trichlorobenzene	ND	9.0	0.86
Hexachlorobutadiene	ND	9.0	1.2
Naphthalene	ND	9.0	1.9
1,2,3-Trichlorobenzene	ND	9.0	0.60

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	105	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	113	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-11-25.0	Diln Fac:	0.9225
Lab ID:	271270-025	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 42%

Analyte	Result	RL	MDL
Freon 12	ND	16	0.63
Chloromethane	ND	16	1.6
Vinyl Chloride	ND	16	1.5
Bromomethane	ND	16	1.9
Chloroethane	ND	16	0.79
Trichlorofluoromethane	ND	8.0	1.1
Acetone	74	32	5.2
Freon 113	ND	8.0	0.70
1,1-Dichloroethene	ND	8.0	1.5
Methylene Chloride	7.3 J	32	1.8
Carbon Disulfide	2.8 J	8.0	1.4
MTBE	ND	8.0	1.6
trans-1,2-Dichloroethene	ND	8.0	1.3
Vinyl Acetate	ND	80	1.1
1,1-Dichloroethane	ND	8.0	1.8
2-Butanone	8.9 J	16	2.1
cis-1,2-Dichloroethene	ND	8.0	1.4
2,2-Dichloropropane	ND	8.0	1.7
Chloroform	ND	8.0	2.0
Bromochloromethane	ND	8.0	1.5
1,1,1-Trichloroethane	ND	8.0	1.3
1,1-Dichloropropene	ND	8.0	1.0
Carbon Tetrachloride	ND	8.0	0.76
1,2-Dichloroethane	ND	8.0	1.5
Benzene	ND	8.0	1.4
Trichloroethene	ND	8.0	1.3
1,2-Dichloropropane	ND	8.0	1.2
Bromodichloromethane	ND	8.0	1.3
Dibromomethane	ND	8.0	1.2
4-Methyl-2-Pentanone	ND	16	1.6
cis-1,3-Dichloropropene	ND	8.0	0.96
Toluene	3.4 J	8.0	1.1
trans-1,3-Dichloropropene	ND	8.0	1.0
1,1,2-Trichloroethane	ND	8.0	0.99
2-Hexanone	ND	16	1.4
1,3-Dichloropropane	ND	8.0	1.3
Tetrachloroethene	ND	8.0	0.83
Dibromochloromethane	ND	8.0	0.82
1,2-Dibromoethane	ND	8.0	1.0
Chlorobenzene	ND	8.0	1.1
1,1,1,2-Tetrachloroethane	ND	8.0	0.99
Ethylbenzene	ND	8.0	1.1
m,p-Xylenes	ND	8.0	2.0
o-Xylene	ND	8.0	1.0
Styrene	ND	8.0	0.92
Bromoform	ND	8.0	0.62
Isopropylbenzene	ND	8.0	0.80
1,1,2,2-Tetrachloroethane	ND	8.0	0.65
1,2,3-Trichloropropane	ND	8.0	0.92
Propylbenzene	ND	8.0	0.71

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-11-25.0	Dil'n Fac:	0.9225
Lab ID:	271270-025	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
Bromobenzene	ND	8.0	0.84
1,3,5-Trimethylbenzene	ND	8.0	0.90
2-Chlorotoluene	ND	8.0	1.1
4-Chlorotoluene	ND	8.0	1.0
tert-Butylbenzene	ND	8.0	0.64
1,2,4-Trimethylbenzene	ND	8.0	0.95
sec-Butylbenzene	ND	8.0	0.67
para-Isopropyl Toluene	ND	8.0	0.67
1,3-Dichlorobenzene	ND	8.0	0.70
1,4-Dichlorobenzene	ND	8.0	0.86
n-Butylbenzene	ND	8.0	0.60
1,2-Dichlorobenzene	ND	8.0	0.84
1,2-Dibromo-3-Chloropropane	ND	8.0	1.5
1,2,4-Trichlorobenzene	ND	8.0	0.66
Hexachlorobutadiene	ND	8.0	0.47
Naphthalene	ND	8.0	1.6
1,2,3-Trichlorobenzene	ND	8.0	0.68

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	132	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	97	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-15.0	Dil'n Fac:	1.250
Lab ID:	271270-026	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Moisture: 47%

Analyte	Result	RL	MDL
Freon 12	ND	24	0.94
Chloromethane	ND	24	2.4
Vinyl Chloride	ND	24	2.2
Bromomethane	ND	24	2.8
Chloroethane	ND	24	1.2
Trichlorofluoromethane	ND	12	1.6
Acetone	79	47	7.8
Freon 113	ND	12	1.0
1,1-Dichloroethene	ND	12	2.2
Methylene Chloride	11 J	47	2.6
Carbon Disulfide	5.7 J	12	2.1
MTBE	ND	12	2.4
trans-1,2-Dichloroethene	ND	12	2.0
Vinyl Acetate	ND	120	1.7
1,1-Dichloroethane	ND	12	2.7
2-Butanone	13 J	24	3.2
cis-1,2-Dichloroethene	ND	12	2.1
2,2-Dichloropropane	ND	12	2.5
Chloroform	ND	12	3.0
Bromochloromethane	ND	12	2.2
1,1,1-Trichloroethane	ND	12	1.9
1,1-Dichloropropene	ND	12	1.5
Carbon Tetrachloride	ND	12	1.1
1,2-Dichloroethane	ND	12	2.2
Benzene	ND	12	2.1
Trichloroethene	ND	12	2.0
1,2-Dichloropropane	ND	12	1.8
Bromodichloromethane	ND	12	2.0
Dibromomethane	ND	12	1.8
4-Methyl-2-Pentanone	ND	24	2.4
cis-1,3-Dichloropropene	ND	12	1.4
Toluene	ND	12	1.7
trans-1,3-Dichloropropene	ND	12	1.5
1,1,2-Trichloroethane	ND	12	1.5
2-Hexanone	ND	24	2.1
1,3-Dichloropropane	ND	12	2.0
Tetrachloroethene	ND	12	1.2
Dibromochloromethane	ND	12	1.2
1,2-Dibromoethane	ND	12	1.5
Chlorobenzene	ND	12	1.6
1,1,1,2-Tetrachloroethane	ND	12	1.5
Ethylbenzene	ND	12	1.6
m,p-Xylenes	ND	12	3.0
o-Xylene	ND	12	1.5
Styrene	ND	12	1.4
Bromoform	ND	12	0.93
Isopropylbenzene	ND	12	1.2
1,1,2,2-Tetrachloroethane	ND	12	0.97
1,2,3-Trichloropropane	ND	12	1.4
Propylbenzene	ND	12	1.1

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-15.0	Dil'n Fac:	1.250
Lab ID:	271270-026	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Analyte	Result	RL	MDL
Bromobenzene	ND	12	1.3
1,3,5-Trimethylbenzene	ND	12	1.3
2-Chlorotoluene	ND	12	1.6
4-Chlorotoluene	ND	12	1.5
tert-Butylbenzene	ND	12	0.95
1,2,4-Trimethylbenzene	ND	12	1.4
sec-Butylbenzene	ND	12	0.99
para-Isopropyl Toluene	ND	12	1.0
1,3-Dichlorobenzene	ND	12	1.0
1,4-Dichlorobenzene	ND	12	1.3
n-Butylbenzene	ND	12	0.90
1,2-Dichlorobenzene	ND	12	1.3
1,2-Dibromo-3-Chloropropane	ND	12	2.2
1,2,4-Trichlorobenzene	ND	12	0.98
Hexachlorobutadiene	ND	12	0.70
Naphthalene	ND	12	2.4
1,2,3-Trichlorobenzene	ND	12	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	108	78-134
1,2-Dichloroethane-d4	122	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	94	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-30.0	Diln Fac:	1.466
Lab ID:	271270-027	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Moisture: 46%

Analyte	Result	RL	MDL
Freon 12	ND	27	1.1
Chloromethane	ND	27	2.8
Vinyl Chloride	ND	27	2.5
Bromomethane	ND	27	3.2
Chloroethane	ND	27	1.3
Trichlorofluoromethane	ND	14	1.9
Acetone	120	54	9.0
Freon 113	ND	14	1.2
1,1-Dichloroethene	ND	14	2.6
Methylene Chloride	13 J	54	3.0
Carbon Disulfide	2.9 J	14	2.4
MTBE	ND	14	2.7
trans-1,2-Dichloroethene	ND	14	2.3
Vinyl Acetate	ND	140	2.0
1,1-Dichloroethane	ND	14	3.1
2-Butanone	10 J	27	3.6
cis-1,2-Dichloroethene	ND	14	2.4
2,2-Dichloropropane	ND	14	2.9
Chloroform	ND	14	3.4
Bromochloromethane	ND	14	2.5
1,1,1-Trichloroethane	ND	14	2.2
1,1-Dichloropropene	ND	14	1.7
Carbon Tetrachloride	ND	14	1.3
1,2-Dichloroethane	ND	14	2.5
Benzene	ND	14	2.5
Trichloroethene	ND	14	2.3
1,2-Dichloropropane	ND	14	2.1
Bromodichloromethane	ND	14	2.3
Dibromomethane	ND	14	2.1
4-Methyl-2-Pentanone	ND	27	2.8
cis-1,3-Dichloropropene	ND	14	1.6
Toluene	6.8 J	14	1.9
trans-1,3-Dichloropropene	ND	14	1.8
1,1,2-Trichloroethane	ND	14	1.7
2-Hexanone	ND	27	2.4
1,3-Dichloropropane	ND	14	2.3
Tetrachloroethene	ND	14	1.4
Dibromochloromethane	ND	14	1.4
1,2-Dibromoethane	ND	14	1.8
Chlorobenzene	ND	14	1.9
1,1,1,2-Tetrachloroethane	ND	14	1.7
Ethylbenzene	ND	14	1.8
m,p-Xylenes	ND	14	3.4
o-Xylene	ND	14	1.7
Styrene	ND	14	1.6
Bromoform	ND	14	1.1
Isopropylbenzene	ND	14	1.4
1,1,2,2-Tetrachloroethane	ND	14	1.1
1,2,3-Trichloropropane	ND	14	1.6
Propylbenzene	ND	14	1.2

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-30.0	Dil'n Fac:	1.466
Lab ID:	271270-027	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Analyte	Result	RL	MDL
Bromobenzene	ND	14	1.4
1,3,5-Trimethylbenzene	ND	14	1.5
2-Chlorotoluene	ND	14	1.8
4-Chlorotoluene	ND	14	1.8
tert-Butylbenzene	ND	14	1.1
1,2,4-Trimethylbenzene	ND	14	1.6
sec-Butylbenzene	ND	14	1.1
para-Isopropyl Toluene	ND	14	1.2
1,3-Dichlorobenzene	ND	14	1.2
1,4-Dichlorobenzene	ND	14	1.5
n-Butylbenzene	ND	14	1.0
1,2-Dichlorobenzene	ND	14	1.4
1,2-Dibromo-3-Chloropropane	ND	14	2.5
1,2,4-Trichlorobenzene	ND	14	1.1
Hexachlorobutadiene	ND	14	0.81
Naphthalene	ND	14	2.7
1,2,3-Trichlorobenzene	ND	14	1.2

Surrogate	%REC	Limits
Dibromofluoromethane	106	78-134
1,2-Dichloroethane-d4	126	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	94	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-45.0	Diln Fac:	0.7485
Lab ID:	271270-028	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Moisture: 21%

Analyte	Result	RL	MDL
Freon 12	ND	9.5	0.38
Chloromethane	ND	9.5	0.98
Vinyl Chloride	ND	9.5	0.88
Bromomethane	ND	9.5	1.1
Chloroethane	ND	9.5	0.47
Trichlorofluoromethane	ND	4.7	0.66
Acetone	28	19	3.1
Freon 113	ND	4.7	0.42
1,1-Dichloroethene	ND	4.7	0.89
Methylene Chloride	2.9 J	19	1.1
Carbon Disulfide	ND	4.7	0.83
MTBE	ND	4.7	0.95
trans-1,2-Dichloroethene	ND	4.7	0.79
Vinyl Acetate	ND	47	0.68
1,1-Dichloroethane	ND	4.7	1.1
2-Butanone	ND	9.5	1.3
cis-1,2-Dichloroethene	ND	4.7	0.82
2,2-Dichloropropane	ND	4.7	1.0
Chloroform	ND	4.7	1.2
Bromochloromethane	ND	4.7	0.89
1,1,1-Trichloroethane	ND	4.7	0.76
1,1-Dichloropropene	ND	4.7	0.59
Carbon Tetrachloride	ND	4.7	0.45
1,2-Dichloroethane	ND	4.7	0.88
Benzene	ND	4.7	0.85
Trichloroethene	ND	4.7	0.79
1,2-Dichloropropane	ND	4.7	0.73
Bromodichloromethane	ND	4.7	0.80
Dibromomethane	ND	4.7	0.73
4-Methyl-2-Pentanone	ND	9.5	0.96
cis-1,3-Dichloropropene	ND	4.7	0.57
Toluene	1.9 J	4.7	0.67
trans-1,3-Dichloropropene	ND	4.7	0.61
1,1,2-Trichloroethane	ND	4.7	0.59
2-Hexanone	ND	9.5	0.83
1,3-Dichloropropane	ND	4.7	0.80
Tetrachloroethene	ND	4.7	0.50
Dibromochloromethane	ND	4.7	0.49
1,2-Dibromoethane	ND	4.7	0.62
Chlorobenzene	ND	4.7	0.65
1,1,1,2-Tetrachloroethane	ND	4.7	0.59
Ethylbenzene	ND	4.7	0.64
m,p-Xylenes	ND	4.7	1.2
o-Xylene	ND	4.7	0.59
Styrene	ND	4.7	0.55
Bromoform	ND	4.7	0.37
Isopropylbenzene	ND	4.7	0.47
1,1,2,2-Tetrachloroethane	ND	4.7	0.39
1,2,3-Trichloropropane	ND	4.7	0.55
Propylbenzene	ND	4.7	0.42

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-45.0	Dil'n Fac:	0.7485
Lab ID:	271270-028	Batch#:	229161
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/06/15

Analyte	Result	RL	MDL
Bromobenzene	ND	4.7	0.50
1,3,5-Trimethylbenzene	ND	4.7	0.54
2-Chlorotoluene	ND	4.7	0.64
4-Chlorotoluene	ND	4.7	0.61
tert-Butylbenzene	ND	4.7	0.38
1,2,4-Trimethylbenzene	ND	4.7	0.57
sec-Butylbenzene	ND	4.7	0.40
para-Isopropyl Toluene	ND	4.7	0.40
1,3-Dichlorobenzene	ND	4.7	0.42
1,4-Dichlorobenzene	ND	4.7	0.51
n-Butylbenzene	ND	4.7	0.36
1,2-Dichlorobenzene	ND	4.7	0.50
1,2-Dibromo-3-Chloropropane	ND	4.7	0.89
1,2,4-Trichlorobenzene	ND	4.7	0.40
Hexachlorobutadiene	ND	4.7	0.28
Naphthalene	ND	4.7	0.95
1,2,3-Trichlorobenzene	ND	4.7	0.40

Surrogate	%REC	Limits
Dibromofluoromethane	104	78-134
1,2-Dichloroethane-d4	128	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	91	78-123

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-60.0	Diln Fac:	0.8319
Lab ID:	271270-029	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Moisture: 25%

Analyte	Result	RL	MDL
Freon 12	ND	11	0.44
Chloromethane	ND	11	1.1
Vinyl Chloride	ND	11	1.0
Bromomethane	ND	11	1.3
Chloroethane	ND	11	0.55
Trichlorofluoromethane	ND	5.5	0.77
Acetone	48	22	3.7
Freon 113	ND	5.5	0.49
1,1-Dichloroethene	ND	5.5	1.0
Methylene Chloride	ND	22	1.2
Carbon Disulfide	ND	5.5	0.97
MTBE	ND	5.5	1.1
trans-1,2-Dichloroethene	ND	5.5	0.93
Vinyl Acetate	ND	55	0.80
1,1-Dichloroethane	ND	5.5	1.3
2-Butanone	ND	11	1.5
cis-1,2-Dichloroethene	ND	5.5	0.96
2,2-Dichloropropane	ND	5.5	1.2
Chloroform	ND	5.5	1.4
Bromochloromethane	ND	5.5	1.0
1,1,1-Trichloroethane	ND	5.5	0.90
1,1-Dichloropropene	ND	5.5	0.70
Carbon Tetrachloride	ND	5.5	0.53
1,2-Dichloroethane	ND	5.5	1.0
Benzene	ND	5.5	1.0
Trichloroethene	ND	5.5	0.93
1,2-Dichloropropane	ND	5.5	0.86
Bromodichloromethane	ND	5.5	0.94
Dibromomethane	ND	5.5	0.86
4-Methyl-2-Pentanone	ND	11	1.1
cis-1,3-Dichloropropene	ND	5.5	0.67
Toluene	ND	5.5	0.79
trans-1,3-Dichloropropene	ND	5.5	0.72
1,1,2-Trichloroethane	ND	5.5	0.69
2-Hexanone	ND	11	0.97
1,3-Dichloropropane	ND	5.5	0.94
Tetrachloroethene	ND	5.5	0.58
Dibromochloromethane	ND	5.5	0.57
1,2-Dibromoethane	ND	5.5	0.72
Chlorobenzene	ND	5.5	0.76
1,1,1,2-Tetrachloroethane	ND	5.5	0.69
Ethylbenzene	ND	5.5	0.75
m,p-Xylenes	ND	5.5	1.4
o-Xylene	ND	5.5	0.69
Styrene	ND	5.5	0.64
Bromoform	ND	5.5	0.44
Isopropylbenzene	ND	5.5	0.55
1,1,2,2-Tetrachloroethane	ND	5.5	0.45
1,2,3-Trichloropropane	ND	5.5	0.64
Propylbenzene	ND	5.5	0.49
Bromobenzene	ND	5.5	0.59

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	IE-13-60.0	Dil'n Fac:	0.8319
Lab ID:	271270-029	Batch#:	229199
Matrix:	Soil	Sampled:	11/03/15
Units:	ug/Kg	Received:	11/03/15
Basis:	dry	Analyzed:	11/08/15

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	5.5	0.63
2-Chlorotoluene	ND	5.5	0.75
4-Chlorotoluene	ND	5.5	0.72
tert-Butylbenzene	ND	5.5	0.45
1,2,4-Trimethylbenzene	ND	5.5	0.67
sec-Butylbenzene	ND	5.5	0.46
para-Isopropyl Toluene	ND	5.5	0.47
1,3-Dichlorobenzene	ND	5.5	0.49
1,4-Dichlorobenzene	ND	5.5	0.60
n-Butylbenzene	ND	5.5	0.42
1,2-Dichlorobenzene	ND	5.5	0.59
1,2-Dibromo-3-Chloropropane	ND	5.5	1.0
1,2,4-Trichlorobenzene	ND	5.5	0.46
Hexachlorobutadiene	ND	5.5	0.33
Naphthalene	ND	5.5	1.1
1,2,3-Trichlorobenzene	ND	5.5	0.47

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	134	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	96	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	229042
Units:	ug/Kg	Analyzed:	11/04/15
Diln Fac:	1.000		

Type: BS Lab ID: QC811169

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	21.33	85	70-134
Benzene	25.00	24.48	98	80-123
Trichloroethene	25.00	23.05	92	80-128
Toluene	25.00	24.79	99	80-120
Chlorobenzene	25.00	24.47	98	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-134
1,2-Dichloroethane-d4	92	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	101	78-123

Type: BSD Lab ID: QC811170

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.26	93	70-134	9	22
Benzene	25.00	25.90	104	80-123	6	21
Trichloroethene	25.00	25.01	100	80-128	8	23
Toluene	25.00	26.33	105	80-120	6	20
Chlorobenzene	25.00	25.99	104	80-123	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	94	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	100	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Dil'n Fac:	1.000
Lab ID:	QC811171	Batch#:	229042
Matrix:	Soil	Analyzed:	11/04/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.46
Chloromethane	ND	10	0.50
Vinyl Chloride	ND	10	0.47
Bromomethane	ND	10	1.1
Chloroethane	ND	10	0.75
Trichlorofluoromethane	ND	5.0	0.26
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.45
1,1-Dichloroethene	ND	5.0	0.44
Methylene Chloride	ND	20	0.45
Carbon Disulfide	ND	5.0	0.48
MTBE	ND	5.0	0.15
trans-1,2-Dichloroethene	ND	5.0	0.62
Vinyl Acetate	ND	50	0.74
1,1-Dichloroethane	ND	5.0	0.37
2-Butanone	ND	10	1.4
cis-1,2-Dichloroethene	ND	5.0	0.30
2,2-Dichloropropane	ND	5.0	0.36
Chloroform	ND	5.0	0.31
Bromochloromethane	ND	5.0	0.53
1,1,1-Trichloroethane	ND	5.0	0.40
1,1-Dichloropropene	ND	5.0	0.25
Carbon Tetrachloride	ND	5.0	0.49
1,2-Dichloroethane	ND	5.0	0.34
Benzene	ND	5.0	0.44
Trichloroethene	ND	5.0	0.42
1,2-Dichloropropane	ND	5.0	0.23
Bromodichloromethane	ND	5.0	0.24
Dibromomethane	ND	5.0	0.65
4-Methyl-2-Pentanone	ND	10	0.48
cis-1,3-Dichloropropene	ND	5.0	0.28
Toluene	ND	5.0	0.32
trans-1,3-Dichloropropene	ND	5.0	0.24
1,1,2-Trichloroethane	ND	5.0	0.37
2-Hexanone	ND	10	1.1
1,3-Dichloropropane	ND	5.0	0.22
Tetrachloroethene	ND	5.0	0.24
Dibromochloromethane	ND	5.0	0.28
1,2-Dibromoethane	ND	5.0	0.21
Chlorobenzene	ND	5.0	0.40
1,1,1,2-Tetrachloroethane	ND	5.0	0.27
Ethylbenzene	ND	5.0	0.38
m,p-Xylenes	ND	5.0	0.91
o-Xylene	ND	5.0	0.27
Styrene	ND	5.0	0.29
Bromoform	ND	5.0	0.47
Isopropylbenzene	ND	5.0	0.30
1,1,2,2-Tetrachloroethane	ND	5.0	0.43
1,2,3-Trichloropropane	ND	5.0	0.25
Propylbenzene	ND	5.0	0.31
Bromobenzene	ND	5.0	0.43
1,3,5-Trimethylbenzene	ND	5.0	0.32
2-Chlorotoluene	ND	5.0	0.39

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811171	Batch#:	229042
Matrix:	Soil	Analyzed:	11/04/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	5.0	0.46
tert-Butylbenzene	ND	5.0	0.38
1,2,4-Trimethylbenzene	ND	5.0	0.28
sec-Butylbenzene	ND	5.0	0.25
para-Isopropyl Toluene	ND	5.0	0.35
1,3-Dichlorobenzene	ND	5.0	0.43
1,4-Dichlorobenzene	ND	5.0	0.40
n-Butylbenzene	ND	5.0	0.37
1,2-Dichlorobenzene	ND	5.0	0.28
1,2-Dibromo-3-Chloropropane	ND	5.0	1.0
1,2,4-Trichlorobenzene	ND	5.0	0.48
Hexachlorobutadiene	ND	5.0	0.66
Naphthalene	ND	5.0	1.1
1,2,3-Trichlorobenzene	ND	5.0	0.33

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	93	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	102	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	229043
Units:	ug/Kg	Analyzed:	11/04/15
Diln Fac:	1.000		

Type: BS Lab ID: QC811172

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	22.41	90	70-134
Benzene	25.00	22.93	92	80-123
Trichloroethene	25.00	22.07	88	80-128
Toluene	25.00	21.07	84	80-120
Chlorobenzene	25.00	22.27	89	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	115	78-134
1,2-Dichloroethane-d4	139 *	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	96	78-123

Type: BSD Lab ID: QC811173

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	21.62	86	70-134	4	22
Benzene	25.00	22.14	89	80-123	4	21
Trichloroethene	25.00	22.29	89	80-128	1	23
Toluene	25.00	21.69	87	80-120	3	20
Chlorobenzene	25.00	22.13	89	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	133	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	100	78-123

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811174	Batch#:	229043
Matrix:	Soil	Analyzed:	11/04/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.40
Chloromethane	ND	10	1.0
Vinyl Chloride	ND	10	0.93
Bromomethane	ND	10	1.2
Chloroethane	ND	10	0.50
Trichlorofluoromethane	ND	5.0	0.70
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.44
1,1-Dichloroethene	ND	5.0	0.94
Methylene Chloride	ND	20	1.1
Carbon Disulfide	ND	5.0	0.87
MTBE	ND	5.0	1.0
trans-1,2-Dichloroethene	ND	5.0	0.84
Vinyl Acetate	ND	50	0.72
1,1-Dichloroethane	ND	5.0	1.2
2-Butanone	ND	10	1.3
cis-1,2-Dichloroethene	ND	5.0	0.87
2,2-Dichloropropane	ND	5.0	1.1
Chloroform	ND	5.0	1.3
Bromochloromethane	ND	5.0	0.93
1,1,1-Trichloroethane	ND	5.0	0.81
1,1-Dichloropropene	ND	5.0	0.63
Carbon Tetrachloride	ND	5.0	0.48
1,2-Dichloroethane	ND	5.0	0.93
Benzene	ND	5.0	0.90
Trichloroethene	ND	5.0	0.84
1,2-Dichloropropane	ND	5.0	0.78
Bromodichloromethane	ND	5.0	0.85
Dibromomethane	ND	5.0	0.77
4-Methyl-2-Pentanone	ND	10	1.0
cis-1,3-Dichloropropene	ND	5.0	0.61
Toluene	ND	5.0	0.71
trans-1,3-Dichloropropene	ND	5.0	0.65
1,1,2-Trichloroethane	ND	5.0	0.62
2-Hexanone	ND	10	0.88
1,3-Dichloropropane	ND	5.0	0.84
Tetrachloroethene	ND	5.0	0.52
Dibromochloromethane	ND	5.0	0.51
1,2-Dibromoethane	ND	5.0	0.65
Chlorobenzene	ND	5.0	0.69
1,1,1,2-Tetrachloroethane	ND	5.0	0.62
Ethylbenzene	ND	5.0	0.68
m,p-Xylenes	ND	5.0	1.3
o-Xylene	ND	5.0	0.63
Styrene	ND	5.0	0.58
Bromoform	ND	5.0	0.39
Isopropylbenzene	ND	5.0	0.50
1,1,2,2-Tetrachloroethane	ND	5.0	0.41
1,2,3-Trichloropropane	ND	5.0	0.58
Propylbenzene	ND	5.0	0.45
Bromobenzene	ND	5.0	0.53
1,3,5-Trimethylbenzene	ND	5.0	0.57

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811174	Batch#:	229043
Matrix:	Soil	Analyzed:	11/04/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	5.0	0.68
4-Chlorotoluene	ND	5.0	0.65
tert-Butylbenzene	ND	5.0	0.40
1,2,4-Trimethylbenzene	ND	5.0	0.60
sec-Butylbenzene	ND	5.0	0.42
para-Isopropyl Toluene	ND	5.0	0.42
1,3-Dichlorobenzene	ND	5.0	0.44
1,4-Dichlorobenzene	ND	5.0	0.54
n-Butylbenzene	ND	5.0	0.38
1,2-Dichlorobenzene	ND	5.0	0.53
1,2-Dibromo-3-Chloropropane	ND	5.0	0.94
1,2,4-Trichlorobenzene	ND	5.0	0.42
Hexachlorobutadiene	ND	5.0	0.30
Naphthalene	ND	5.0	1.0
1,2,3-Trichlorobenzene	ND	5.0	0.43

Surrogate	%REC	Limits
Dibromofluoromethane	120	78-134
1,2-Dichloroethane-d4	140 *	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	117	78-123

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5030B
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	229042
MSS Lab ID:	271283-001	Sampled:	11/03/15
Matrix:	Soil	Received:	11/04/15
Units:	ug/Kg	Analyzed:	11/04/15
Basis:	as received		

Type: MS Diln Fac: 0.9940
Lab ID: QC811275

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4331	49.70	43.78	88	56-133
Benzene	<0.4294	49.70	45.91	92	57-120
Trichloroethene	<0.4125	49.70	43.95	88	49-145
Toluene	<0.3119	49.70	45.67	92	51-120
Chlorobenzene	<0.3890	49.70	43.29	87	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	96	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	103	78-123

Type: MSD Diln Fac: 0.9960
Lab ID: QC811276

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.80	46.26	93	56-133	5	46
Benzene	49.80	48.62	98	57-120	6	44
Trichloroethene	49.80	46.13	93	49-145	5	46
Toluene	49.80	48.26	97	51-120	5	47
Chlorobenzene	49.80	45.01	90	47-120	4	50

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	96	80-138
Toluene-d8	103	80-120
Bromofluorobenzene	103	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	229043
MSS Lab ID:	271268-002	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Analyzed:	11/04/15
Basis:	dry		

Type:	MS	Moisture:	16%
Lab ID:	QC811281	Diln Fac:	0.6964

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.7693	41.45	50.19	121	56-133
Benzene	<0.7388	41.45	44.67	108	57-120
Trichloroethene	<0.6838	41.45	44.47	107	49-145
Toluene	<0.5824	41.45	41.65	100	51-120
Chlorobenzene	5.461	41.45	52.16	113	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	116	78-134
1,2-Dichloroethane-d4	139 *	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	102	78-123

Type:	MSD	Moisture:	16%
Lab ID:	QC811282	Diln Fac:	0.7704

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	45.86	53.22	116	56-133	4	46
Benzene	45.86	49.18	107	57-120	0	44
Trichloroethene	45.86	48.59	106	49-145	1	46
Toluene	45.86	45.61	99	51-120	1	47
Chlorobenzene	45.86	63.20	126 *	47-120	10	50

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	136	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	97	78-123

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	229152
Units:	ug/Kg	Analyzed:	11/06/15
Diln Fac:	1.000		

Type: BS Lab ID: QC811611

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	19.67	79	70-134
Benzene	25.00	24.23	97	80-123
Trichloroethene	25.00	22.74	91	80-128
Toluene	25.00	24.50	98	80-120
Chlorobenzene	25.00	23.96	96	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	96	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	105	78-123

Type: BSD Lab ID: QC811612

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	18.99	76	70-134	4	22
Benzene	25.00	23.65	95	80-123	2	21
Trichloroethene	25.00	22.21	89	80-128	2	23
Toluene	25.00	24.06	96	80-120	2	20
Chlorobenzene	25.00	23.63	95	80-123	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-134
1,2-Dichloroethane-d4	94	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	104	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811613	Batch#:	229152
Matrix:	Soil	Analyzed:	11/06/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.46
Chloromethane	ND	10	0.50
Vinyl Chloride	ND	10	0.47
Bromomethane	ND	10	1.1
Chloroethane	ND	10	0.75
Trichlorofluoromethane	ND	5.0	0.26
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.45
1,1-Dichloroethene	ND	5.0	0.44
Methylene Chloride	ND	20	0.45
Carbon Disulfide	ND	5.0	0.48
MTBE	ND	5.0	0.15
trans-1,2-Dichloroethene	ND	5.0	0.62
Vinyl Acetate	ND	50	0.74
1,1-Dichloroethane	ND	5.0	0.37
2-Butanone	ND	10	1.4
cis-1,2-Dichloroethene	ND	5.0	0.30
2,2-Dichloropropane	ND	5.0	0.36
Chloroform	ND	5.0	0.31
Bromochloromethane	ND	5.0	0.53
1,1,1-Trichloroethane	ND	5.0	0.40
1,1-Dichloropropene	ND	5.0	0.25
Carbon Tetrachloride	ND	5.0	0.49
1,2-Dichloroethane	ND	5.0	0.34
Benzene	ND	5.0	0.44
Trichloroethene	ND	5.0	0.42
1,2-Dichloropropane	ND	5.0	0.23
Bromodichloromethane	ND	5.0	0.24
Dibromomethane	ND	5.0	0.65
4-Methyl-2-Pentanone	ND	10	0.48
cis-1,3-Dichloropropene	ND	5.0	0.28
Toluene	ND	5.0	0.32
trans-1,3-Dichloropropene	ND	5.0	0.24
1,1,2-Trichloroethane	ND	5.0	0.37
2-Hexanone	ND	10	1.1
1,3-Dichloropropane	ND	5.0	0.22
Tetrachloroethene	ND	5.0	0.24
Dibromochloromethane	ND	5.0	0.28
1,2-Dibromoethane	ND	5.0	0.21
Chlorobenzene	ND	5.0	0.40
1,1,1,2-Tetrachloroethane	ND	5.0	0.27
Ethylbenzene	ND	5.0	0.38
m,p-Xylenes	ND	5.0	0.91
o-Xylene	ND	5.0	0.27
Styrene	ND	5.0	0.29
Bromoform	ND	5.0	0.47
Isopropylbenzene	ND	5.0	0.30
1,1,2,2-Tetrachloroethane	ND	5.0	0.43
1,2,3-Trichloropropane	ND	5.0	0.25
Propylbenzene	ND	5.0	0.31
Bromobenzene	ND	5.0	0.43
1,3,5-Trimethylbenzene	ND	5.0	0.32
2-Chlorotoluene	ND	5.0	0.39

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811613	Batch#:	229152
Matrix:	Soil	Analyzed:	11/06/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	5.0	0.46
tert-Butylbenzene	ND	5.0	0.38
1,2,4-Trimethylbenzene	ND	5.0	0.28
sec-Butylbenzene	ND	5.0	0.25
para-Isopropyl Toluene	ND	5.0	0.35
1,3-Dichlorobenzene	ND	5.0	0.43
1,4-Dichlorobenzene	ND	5.0	0.40
n-Butylbenzene	ND	5.0	0.37
1,2-Dichlorobenzene	ND	5.0	0.28
1,2-Dibromo-3-Chloropropane	ND	5.0	1.0
1,2,4-Trichlorobenzene	ND	5.0	0.48
Hexachlorobutadiene	ND	5.0	0.66
Naphthalene	ND	5.0	1.1
1,2,3-Trichlorobenzene	ND	5.0	0.33

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	96	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811643	Batch#:	229161
Matrix:	Soil	Analyzed:	11/06/15
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	23.63	95	70-134
Benzene	25.00	26.46	106	80-123
Trichloroethene	25.00	26.86	107	80-128
Toluene	25.00	25.97	104	80-120
Chlorobenzene	25.00	27.41	110	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	105	78-134
1,2-Dichloroethane-d4	127	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	94	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811645	Batch#:	229161
Matrix:	Soil	Analyzed:	11/06/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.40
Chloromethane	ND	10	1.0
Vinyl Chloride	ND	10	0.93
Bromomethane	ND	10	1.2
Chloroethane	ND	10	0.50
Trichlorofluoromethane	ND	5.0	0.70
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.44
1,1-Dichloroethene	ND	5.0	0.94
Methylene Chloride	ND	20	1.1
Carbon Disulfide	ND	5.0	0.87
MTBE	ND	5.0	1.0
trans-1,2-Dichloroethene	ND	5.0	0.84
Vinyl Acetate	ND	50	0.72
1,1-Dichloroethane	ND	5.0	1.2
2-Butanone	ND	10	1.3
cis-1,2-Dichloroethene	ND	5.0	0.87
2,2-Dichloropropane	ND	5.0	1.1
Chloroform	ND	5.0	1.3
Bromochloromethane	ND	5.0	0.93
1,1,1-Trichloroethane	ND	5.0	0.81
1,1-Dichloropropene	ND	5.0	0.63
Carbon Tetrachloride	ND	5.0	0.48
1,2-Dichloroethane	ND	5.0	0.93
Benzene	ND	5.0	0.90
Trichloroethene	ND	5.0	0.84
1,2-Dichloropropane	ND	5.0	0.78
Bromodichloromethane	ND	5.0	0.85
Dibromomethane	ND	5.0	0.77
4-Methyl-2-Pentanone	ND	10	1.0
cis-1,3-Dichloropropene	ND	5.0	0.61
Toluene	ND	5.0	0.71
trans-1,3-Dichloropropene	ND	5.0	0.65
1,1,2-Trichloroethane	ND	5.0	0.62
2-Hexanone	ND	10	0.88
1,3-Dichloropropane	ND	5.0	0.84
Tetrachloroethene	ND	5.0	0.52
Dibromochloromethane	ND	5.0	0.51
1,2-Dibromoethane	ND	5.0	0.65
Chlorobenzene	ND	5.0	0.69
1,1,1,2-Tetrachloroethane	ND	5.0	0.62
Ethylbenzene	ND	5.0	0.68
m,p-Xylenes	ND	5.0	1.3
o-Xylene	ND	5.0	0.63
Styrene	ND	5.0	0.58
Bromoform	ND	5.0	0.39
Isopropylbenzene	ND	5.0	0.50
1,1,2,2-Tetrachloroethane	ND	5.0	0.41
1,2,3-Trichloropropane	ND	5.0	0.58
Propylbenzene	ND	5.0	0.45
Bromobenzene	ND	5.0	0.53
1,3,5-Trimethylbenzene	ND	5.0	0.57
2-Chlorotoluene	ND	5.0	0.68

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811645	Batch#:	229161
Matrix:	Soil	Analyzed:	11/06/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	5.0	0.65
tert-Butylbenzene	ND	5.0	0.40
1,2,4-Trimethylbenzene	ND	5.0	0.60
sec-Butylbenzene	ND	5.0	0.42
para-Isopropyl Toluene	ND	5.0	0.42
1,3-Dichlorobenzene	ND	5.0	0.44
1,4-Dichlorobenzene	ND	5.0	0.54
n-Butylbenzene	ND	5.0	0.38
1,2-Dichlorobenzene	ND	5.0	0.53
1,2-Dibromo-3-Chloropropane	ND	5.0	0.94
1,2,4-Trichlorobenzene	ND	5.0	0.42
Hexachlorobutadiene	ND	5.0	0.30
Naphthalene	ND	5.0	1.0
1,2,3-Trichlorobenzene	ND	5.0	0.43

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	124	80-138
Toluene-d8	100	80-120
Bromofluorobenzene	111	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5030B
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	229161
MSS Lab ID:	271375-002	Sampled:	11/06/15
Matrix:	Soil	Received:	11/06/15
Units:	ug/Kg	Analyzed:	11/09/15
Basis:	as received		

Type: MS Diln Fac: 0.9901
Lab ID: QC811705

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.8214	49.50	49.74	100	56-133
Benzene	<0.7887	49.50	45.86	93	57-120
Trichloroethene	<0.7300	49.50	49.65	100	49-145
Toluene	<0.6218	49.50	46.29	94	51-120
Chlorobenzene	<0.5997	49.50	49.42	100	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	133	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	96	78-123

Type: MSD Diln Fac: 0.9709
Lab ID: QC811706

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.54	45.14	93	56-133	8	46
Benzene	48.54	39.82	82	57-120	12	44
Trichloroethene	48.54	43.88	90	49-145	10	46
Toluene	48.54	41.42	85	51-120	9	47
Chlorobenzene	48.54	43.59	90	47-120	11	50

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	131	80-138
Toluene-d8	95	80-120
Bromofluorobenzene	93	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811792	Batch#:	229199
Matrix:	Soil	Analyzed:	11/08/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.40
Chloromethane	ND	10	1.0
Vinyl Chloride	ND	10	0.93
Bromomethane	ND	10	1.2
Chloroethane	ND	10	0.50
Trichlorofluoromethane	ND	5.0	0.70
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.44
1,1-Dichloroethene	ND	5.0	0.94
Methylene Chloride	ND	20	1.1
Carbon Disulfide	ND	5.0	0.87
MTBE	ND	5.0	1.0
trans-1,2-Dichloroethene	ND	5.0	0.84
Vinyl Acetate	ND	50	0.72
1,1-Dichloroethane	ND	5.0	1.2
2-Butanone	ND	10	1.3
cis-1,2-Dichloroethene	ND	5.0	0.87
2,2-Dichloropropane	ND	5.0	1.1
Chloroform	ND	5.0	1.3
Bromochloromethane	ND	5.0	0.93
1,1,1-Trichloroethane	ND	5.0	0.81
1,1-Dichloropropene	ND	5.0	0.63
Carbon Tetrachloride	ND	5.0	0.48
1,2-Dichloroethane	ND	5.0	0.93
Benzene	ND	5.0	0.90
Trichloroethene	ND	5.0	0.84
1,2-Dichloropropane	ND	5.0	0.78
Bromodichloromethane	ND	5.0	0.85
Dibromomethane	ND	5.0	0.77
4-Methyl-2-Pentanone	ND	10	1.0
cis-1,3-Dichloropropene	ND	5.0	0.61
Toluene	ND	5.0	0.71
trans-1,3-Dichloropropene	ND	5.0	0.65
1,1,2-Trichloroethane	ND	5.0	0.62
2-Hexanone	ND	10	0.88
1,3-Dichloropropane	ND	5.0	0.84
Tetrachloroethene	ND	5.0	0.52
Dibromochloromethane	ND	5.0	0.51
1,2-Dibromoethane	ND	5.0	0.65
Chlorobenzene	ND	5.0	0.69
1,1,1,2-Tetrachloroethane	ND	5.0	0.62
Ethylbenzene	ND	5.0	0.68
m,p-Xylenes	ND	5.0	1.3
o-Xylene	ND	5.0	0.63
Styrene	ND	5.0	0.58
Bromoform	ND	5.0	0.39
Isopropylbenzene	ND	5.0	0.50
1,1,2,2-Tetrachloroethane	ND	5.0	0.41
1,2,3-Trichloropropane	ND	5.0	0.58
Propylbenzene	ND	5.0	0.45
Bromobenzene	ND	5.0	0.53
1,3,5-Trimethylbenzene	ND	5.0	0.57
2-Chlorotoluene	ND	5.0	0.68

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811792	Batch#:	229199
Matrix:	Soil	Analyzed:	11/08/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	5.0	0.65
tert-Butylbenzene	ND	5.0	0.40
1,2,4-Trimethylbenzene	ND	5.0	0.60
sec-Butylbenzene	ND	5.0	0.42
para-Isopropyl Toluene	ND	5.0	0.42
1,3-Dichlorobenzene	ND	5.0	0.44
1,4-Dichlorobenzene	ND	5.0	0.54
n-Butylbenzene	ND	5.0	0.38
1,2-Dichlorobenzene	ND	5.0	0.53
1,2-Dibromo-3-Chloropropane	ND	5.0	0.94
1,2,4-Trichlorobenzene	ND	5.0	0.42
Hexachlorobutadiene	ND	5.0	0.30
Naphthalene	ND	5.0	1.0
1,2,3-Trichlorobenzene	ND	5.0	0.43

Surrogate	%REC	Limits
Dibromofluoromethane	117	78-134
1,2-Dichloroethane-d4	127	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	108	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811793	Batch#:	229199
Matrix:	Soil	Analyzed:	11/08/15
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	23.94	96	70-134
Benzene	25.00	26.05	104	80-123
Trichloroethene	25.00	26.83	107	80-128
Toluene	25.00	25.25	101	80-120
Chlorobenzene	25.00	26.72	107	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	125	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	89	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5030B
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	229199
MSS Lab ID:	271311-001	Sampled:	11/04/15
Matrix:	Soil	Received:	11/04/15
Units:	ug/Kg	Analyzed:	11/09/15
Basis:	as received		

Type: MS Diln Fac: 0.9488
Lab ID: QC811794

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.9018	47.44	35.20	74	56-133
Benzene	<0.8659	47.44	37.05	78	57-120
Trichloroethene	<0.8015	47.44	38.84	82	49-145
Toluene	<0.6826	47.44	37.97	80	51-120
Chlorobenzene	<0.6584	47.44	32.11	68	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	126	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	91	78-123

Type: MSD Diln Fac: 0.8865
Lab ID: QC811795

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	44.33	38.28	86	56-133	15	46
Benzene	44.33	32.90	74	57-120	5	44
Trichloroethene	44.33	34.19	77	49-145	6	46
Toluene	44.33	33.59	76	51-120	5	47
Chlorobenzene	44.33	32.78	74	47-120	9	50

Surrogate	%REC	Limits
Dibromofluoromethane	116	78-134
1,2-Dichloroethane-d4	133	80-138
Toluene-d8	93	80-120
Bromofluorobenzene	95	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811924	Batch#:	229231
Matrix:	Soil	Analyzed:	11/09/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
Freon 12	ND	10	0.46
Chloromethane	ND	10	0.50
Vinyl Chloride	ND	10	0.47
Bromomethane	ND	10	1.1
Chloroethane	ND	10	0.75
Trichlorofluoromethane	ND	5.0	0.26
Acetone	ND	20	3.3
Freon 113	ND	5.0	0.45
1,1-Dichloroethene	ND	5.0	0.44
Methylene Chloride	ND	20	0.45
Carbon Disulfide	ND	5.0	0.48
MTBE	ND	5.0	0.15
trans-1,2-Dichloroethene	ND	5.0	0.62
Vinyl Acetate	ND	50	0.74
1,1-Dichloroethane	ND	5.0	0.37
2-Butanone	ND	10	1.4
cis-1,2-Dichloroethene	ND	5.0	0.30
2,2-Dichloropropane	ND	5.0	0.36
Chloroform	ND	5.0	0.31
Bromochloromethane	ND	5.0	0.53
1,1,1-Trichloroethane	ND	5.0	0.40
1,1-Dichloropropene	ND	5.0	0.25
Carbon Tetrachloride	ND	5.0	0.49
1,2-Dichloroethane	ND	5.0	0.34
Benzene	ND	5.0	0.44
Trichloroethene	ND	5.0	0.42
1,2-Dichloropropane	ND	5.0	0.23
Bromodichloromethane	ND	5.0	0.24
Dibromomethane	ND	5.0	0.65
4-Methyl-2-Pentanone	ND	10	0.48
cis-1,3-Dichloropropene	ND	5.0	0.28
Toluene	ND	5.0	0.32
trans-1,3-Dichloropropene	ND	5.0	0.24
1,1,2-Trichloroethane	ND	5.0	0.37
2-Hexanone	ND	10	1.1
1,3-Dichloropropane	ND	5.0	0.22
Tetrachloroethene	ND	5.0	0.24
Dibromochloromethane	ND	5.0	0.28
1,2-Dibromoethane	ND	5.0	0.21
Chlorobenzene	ND	5.0	0.40
1,1,1,2-Tetrachloroethane	ND	5.0	0.27
Ethylbenzene	ND	5.0	0.38
m,p-Xylenes	ND	5.0	0.91
o-Xylene	ND	5.0	0.27
Styrene	ND	5.0	0.29
Bromoform	ND	5.0	0.47
Isopropylbenzene	ND	5.0	0.30
1,1,2,2-Tetrachloroethane	ND	5.0	0.43
1,2,3-Trichloropropane	ND	5.0	0.25
Propylbenzene	ND	5.0	0.31
Bromobenzene	ND	5.0	0.43
1,3,5-Trimethylbenzene	ND	5.0	0.32
2-Chlorotoluene	ND	5.0	0.39

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811924	Batch#:	229231
Matrix:	Soil	Analyzed:	11/09/15
Units:	ug/Kg		

Analyte	Result	RL	MDL
4-Chlorotoluene	ND	5.0	0.46
tert-Butylbenzene	ND	5.0	0.38
1,2,4-Trimethylbenzene	ND	5.0	0.28
sec-Butylbenzene	ND	5.0	0.25
para-Isopropyl Toluene	ND	5.0	0.35
1,3-Dichlorobenzene	ND	5.0	0.43
1,4-Dichlorobenzene	ND	5.0	0.40
n-Butylbenzene	ND	5.0	0.37
1,2-Dichlorobenzene	ND	5.0	0.28
1,2-Dibromo-3-Chloropropane	ND	5.0	1.0
1,2,4-Trichlorobenzene	ND	5.0	0.48
Hexachlorobutadiene	ND	5.0	0.66
Naphthalene	ND	5.0	1.1
1,2,3-Trichlorobenzene	ND	5.0	0.33

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	102	80-120
Bromofluorobenzene	105	78-123

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5035
Project#:	15-1313A	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811925	Batch#:	229231
Matrix:	Soil	Analyzed:	11/09/15
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.26	105	70-134
Benzene	25.00	27.44	110	80-123
Trichloroethene	25.00	25.41	102	80-128
Toluene	25.00	26.78	107	80-120
Chlorobenzene	25.00	25.71	103	80-123

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	106	78-123

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 5030B
Project#:	15-1313A	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	229231
MSS Lab ID:	271381-001	Sampled:	11/06/15
Matrix:	Soil	Received:	11/06/15
Units:	ug/Kg	Analyzed:	11/09/15
Basis:	as received		

Type: MS Diln Fac: 0.9843
Lab ID: QC811926

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4136	49.21	45.52	92	56-133
Benzene	<0.4100	49.21	47.96	97	57-120
Trichloroethene	<0.3939	49.21	43.10	88	49-145
Toluene	<0.2978	49.21	44.88	91	51-120
Chlorobenzene	<0.3715	49.21	39.56	80	47-120

Surrogate	%REC	Limits
Dibromofluoromethane	108	78-134
1,2-Dichloroethane-d4	109	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	110	78-123

Type: MSD Diln Fac: 0.9881
Lab ID: QC811927

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.41	43.01	87	56-133	6	46
Benzene	49.41	44.73	91	57-120	7	44
Trichloroethene	49.41	39.87	81	49-145	8	46
Toluene	49.41	41.69	84	51-120	8	47
Chlorobenzene	49.41	36.10	73	47-120	10	50

Surrogate	%REC	Limits
Dibromofluoromethane	108	78-134
1,2-Dichloroethane-d4	109	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	112	78-123

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-10-04.0	Batch#:	229093
Lab ID:	271270-001	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 34%

Analyte	Result	RL
Naphthalene	ND	7.5
Acenaphthylene	ND	7.5
Acenaphthene	ND	7.5
Fluorene	ND	7.5
Phenanthrene	ND	7.5
Anthracene	ND	7.5
Fluoranthene	ND	7.5
Pyrene	ND	7.5
Benzo(a)anthracene	ND	7.5
Chrysene	ND	7.5
Benzo(b)fluoranthene	ND	7.5
Benzo(k)fluoranthene	ND	7.5
Benzo(a)pyrene	ND	7.5
Indeno(1,2,3-cd)pyrene	ND	7.5
Dibenz(a,h)anthracene	ND	7.5
Benzo(g,h,i)perylene	ND	7.5

Surrogate	%REC	Limits
Nitrobenzene-d5	70	40-120
2-Fluorobiphenyl	58	46-120
Terphenyl-d14	66	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-04-02.0	Batch#:	229093
Lab ID:	271270-002	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 44%

Analyte	Result	RL
Naphthalene	ND	9.0
Acenaphthylene	ND	9.0
Acenaphthene	ND	9.0
Fluorene	ND	9.0
Phenanthrene	ND	9.0
Anthracene	ND	9.0
Fluoranthene	ND	9.0
Pyrene	ND	9.0
Benzo(a)anthracene	ND	9.0
Chrysene	ND	9.0
Benzo(b)fluoranthene	ND	9.0
Benzo(k)fluoranthene	ND	9.0
Benzo(a)pyrene	ND	9.0
Indeno(1,2,3-cd)pyrene	ND	9.0
Dibenz(a,h)anthracene	ND	9.0
Benzo(g,h,i)perylene	ND	9.0

Surrogate	%REC	Limits
Nitrobenzene-d5	64	40-120
2-Fluorobiphenyl	54	46-120
Terphenyl-d14	65	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-04-04.0	Batch#:	229093
Lab ID:	271270-003	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	2.000		

Moisture: 41%

Analyte	Result	RL
Naphthalene	ND	17
Acenaphthylene	ND	17
Acenaphthene	ND	17
Fluorene	ND	17
Phenanthrene	ND	17
Anthracene	ND	17
Fluoranthene	ND	17
Pyrene	ND	17
Benzo(a)anthracene	ND	17
Chrysene	ND	17
Benzo(b)fluoranthene	ND	17
Benzo(k)fluoranthene	ND	17
Benzo(a)pyrene	ND	17
Indeno(1,2,3-cd)pyrene	ND	17
Dibenz(a,h)anthracene	ND	17
Benzo(g,h,i)perylene	ND	17

Surrogate	%REC	Limits
Nitrobenzene-d5	57	40-120
2-Fluorobiphenyl	53	46-120
Terphenyl-d14	61	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-07-02.0	Batch#:	229093
Lab ID:	271270-004	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 43%

Analyte	Result	RL
Naphthalene	ND	8.8
Acenaphthylene	ND	8.8
Acenaphthene	ND	8.8
Fluorene	ND	8.8
Phenanthrene	ND	8.8
Anthracene	ND	8.8
Fluoranthene	ND	8.8
Pyrene	ND	8.8
Benzo(a)anthracene	ND	8.8
Chrysene	ND	8.8
Benzo(b)fluoranthene	ND	8.8
Benzo(k)fluoranthene	ND	8.8
Benzo(a)pyrene	ND	8.8
Indeno(1,2,3-cd)pyrene	ND	8.8
Dibenz(a,h)anthracene	ND	8.8
Benzo(g,h,i)perylene	ND	8.8

Surrogate	%REC	Limits
Nitrobenzene-d5	63	40-120
2-Fluorobiphenyl	51	46-120
Terphenyl-d14	59	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-07-04.0	Batch#:	229093
Lab ID:	271270-005	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	5.000		

Moisture: 42%

Analyte	Result	RL
Naphthalene	ND	43
Acenaphthylene	ND	43
Acenaphthene	ND	43
Fluorene	ND	43
Phenanthrene	ND	43
Anthracene	ND	43
Fluoranthene	ND	43
Pyrene	ND	43
Benzo(a)anthracene	ND	43
Chrysene	ND	43
Benzo(b)fluoranthene	ND	43
Benzo(k)fluoranthene	ND	43
Benzo(a)pyrene	ND	43
Indeno(1,2,3-cd)pyrene	ND	43
Dibenz(a,h)anthracene	ND	43
Benzo(g,h,i)perylene	ND	43

Surrogate	%REC	Limits
Nitrobenzene-d5	51	40-120
2-Fluorobiphenyl	59	46-120
Terphenyl-d14	67	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-06-02.0	Batch#:	229093
Lab ID:	271270-006	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 32%

Analyte	Result	RL
Naphthalene	ND	7.4
Acenaphthylene	ND	7.4
Acenaphthene	ND	7.4
Fluorene	ND	7.4
Phenanthrene	ND	7.4
Anthracene	ND	7.4
Fluoranthene	ND	7.4
Pyrene	ND	7.4
Benzo(a)anthracene	ND	7.4
Chrysene	ND	7.4
Benzo(b)fluoranthene	ND	7.4
Benzo(k)fluoranthene	ND	7.4
Benzo(a)pyrene	ND	7.4
Indeno(1,2,3-cd)pyrene	ND	7.4
Dibenz(a,h)anthracene	ND	7.4
Benzo(g,h,i)perylene	ND	7.4

Surrogate	%REC	Limits
Nitrobenzene-d5	74	40-120
2-Fluorobiphenyl	61	46-120
Terphenyl-d14	70	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-06-04.0	Batch#:	229093
Lab ID:	271270-007	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
Naphthalene	ND	8.2
Acenaphthylene	ND	8.2
Acenaphthene	ND	8.2
Fluorene	ND	8.2
Phenanthrene	ND	8.2
Anthracene	ND	8.2
Fluoranthene	ND	8.2
Pyrene	ND	8.2
Benzo(a)anthracene	ND	8.2
Chrysene	ND	8.2
Benzo(b)fluoranthene	ND	8.2
Benzo(k)fluoranthene	ND	8.2
Benzo(a)pyrene	ND	8.2
Indeno(1,2,3-cd)pyrene	ND	8.2
Dibenz(a,h)anthracene	ND	8.2
Benzo(g,h,i)perylene	ND	8.2

Surrogate	%REC	Limits
Nitrobenzene-d5	75	40-120
2-Fluorobiphenyl	62	46-120
Terphenyl-d14	70	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-05-02.0	Batch#:	229093
Lab ID:	271270-008	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	10.00		

Moisture: 41%

Analyte	Result	RL
Naphthalene	ND	84
Acenaphthylene	ND	84
Acenaphthene	ND	84
Fluorene	ND	84
Phenanthrene	ND	84
Anthracene	ND	84
Fluoranthene	ND	84
Pyrene	ND	84
Benzo(a)anthracene	ND	84
Chrysene	ND	84
Benzo(b)fluoranthene	ND	84
Benzo(k)fluoranthene	ND	84
Benzo(a)pyrene	ND	84
Indeno(1,2,3-cd)pyrene	ND	84
Dibenz(a,h)anthracene	ND	84
Benzo(g,h,i)perylene	ND	84

Surrogate	%REC	Limits
Nitrobenzene-d5	DO	40-120
2-Fluorobiphenyl	DO	46-120
Terphenyl-d14	DO	43-120

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-05-04.0	Batch#:	229093
Lab ID:	271270-009	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
Naphthalene	ND	8.2
Acenaphthylene	ND	8.2
Acenaphthene	ND	8.2
Fluorene	ND	8.2
Phenanthrene	ND	8.2
Anthracene	ND	8.2
Fluoranthene	ND	8.2
Pyrene	ND	8.2
Benzo(a)anthracene	ND	8.2
Chrysene	ND	8.2
Benzo(b)fluoranthene	ND	8.2
Benzo(k)fluoranthene	ND	8.2
Benzo(a)pyrene	ND	8.2
Indeno(1,2,3-cd)pyrene	ND	8.2
Dibenz(a,h)anthracene	ND	8.2
Benzo(g,h,i)perylene	ND	8.2

Surrogate	%REC	Limits
Nitrobenzene-d5	76	40-120
2-Fluorobiphenyl	61	46-120
Terphenyl-d14	68	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-13-75.0	Batch#:	229093
Lab ID:	271270-010	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 18%

Analyte	Result	RL
Naphthalene	ND	6.1
Acenaphthylene	ND	6.1
Acenaphthene	ND	6.1
Fluorene	ND	6.1
Phenanthrene	ND	6.1
Anthracene	ND	6.1
Fluoranthene	ND	6.1
Pyrene	ND	6.1
Benzo(a)anthracene	ND	6.1
Chrysene	ND	6.1
Benzo(b)fluoranthene	ND	6.1
Benzo(k)fluoranthene	ND	6.1
Benzo(a)pyrene	ND	6.1
Indeno(1,2,3-cd)pyrene	ND	6.1
Dibenz(a,h)anthracene	ND	6.1
Benzo(g,h,i)perylene	ND	6.1

Surrogate	%REC	Limits
Nitrobenzene-d5	74	40-120
2-Fluorobiphenyl	62	46-120
Terphenyl-d14	72	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-03-02.0	Batch#:	229093
Lab ID:	271270-011	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
Naphthalene	ND	8.1
Acenaphthylene	ND	8.1
Acenaphthene	ND	8.1
Fluorene	ND	8.1
Phenanthrene	ND	8.1
Anthracene	ND	8.1
Fluoranthene	ND	8.1
Pyrene	ND	8.1
Benzo(a)anthracene	ND	8.1
Chrysene	ND	8.1
Benzo(b)fluoranthene	ND	8.1
Benzo(k)fluoranthene	ND	8.1
Benzo(a)pyrene	ND	8.1
Indeno(1,2,3-cd)pyrene	ND	8.1
Dibenz(a,h)anthracene	ND	8.1
Benzo(g,h,i)perylene	ND	8.1

Surrogate	%REC	Limits
Nitrobenzene-d5	73	40-120
2-Fluorobiphenyl	62	46-120
Terphenyl-d14	68	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-03-04.0	Batch#:	229093
Lab ID:	271270-012	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 45%

Analyte	Result	RL
Naphthalene	ND	9.1
Acenaphthylene	ND	9.1
Acenaphthene	ND	9.1
Fluorene	ND	9.1
Phenanthrene	ND	9.1
Anthracene	ND	9.1
Fluoranthene	ND	9.1
Pyrene	ND	9.1
Benzo(a)anthracene	ND	9.1
Chrysene	ND	9.1
Benzo(b)fluoranthene	ND	9.1
Benzo(k)fluoranthene	ND	9.1
Benzo(a)pyrene	ND	9.1
Indeno(1,2,3-cd)pyrene	ND	9.1
Dibenz(a,h)anthracene	ND	9.1
Benzo(g,h,i)perylene	ND	9.1

Surrogate	%REC	Limits
Nitrobenzene-d5	69	40-120
2-Fluorobiphenyl	58	46-120
Terphenyl-d14	71	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-08-02.0	Batch#:	229093
Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 45%

Analyte	Result	RL
Naphthalene	ND	9.0
Acenaphthylene	ND	9.0
Acenaphthene	ND	9.0
Fluorene	ND	9.0
Phenanthrene	ND	9.0
Anthracene	ND	9.0
Fluoranthene	ND	9.0
Pyrene	ND	9.0
Benzo(a)anthracene	ND	9.0
Chrysene	ND	9.0
Benzo(b)fluoranthene	ND	9.0
Benzo(k)fluoranthene	ND	9.0
Benzo(a)pyrene	ND	9.0
Indeno(1,2,3-cd)pyrene	ND	9.0
Dibenz(a,h)anthracene	ND	9.0
Benzo(g,h,i)perylene	ND	9.0

Surrogate	%REC	Limits
Nitrobenzene-d5	88	40-120
2-Fluorobiphenyl	69	46-120
Terphenyl-d14	78	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-08-04.0	Batch#:	229093
Lab ID:	271270-014	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 46%

Analyte	Result	RL
Naphthalene	ND	9.4
Acenaphthylene	ND	9.4
Acenaphthene	ND	9.4
Fluorene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%REC	Limits
Nitrobenzene-d5	74	40-120
2-Fluorobiphenyl	59	46-120
Terphenyl-d14	72	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-02-02.0	Batch#:	229093
Lab ID:	271270-015	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	5.000		

Moisture: 33%

Analyte	Result	RL
Naphthalene	ND	37
Acenaphthylene	ND	37
Acenaphthene	ND	37
Fluorene	ND	37
Phenanthrene	ND	37
Anthracene	ND	37
Fluoranthene	ND	37
Pyrene	ND	37
Benzo(a)anthracene	ND	37
Chrysene	ND	37
Benzo(b)fluoranthene	ND	37
Benzo(k)fluoranthene	ND	37
Benzo(a)pyrene	ND	37
Indeno(1,2,3-cd)pyrene	ND	37
Dibenz(a,h)anthracene	ND	37
Benzo(g,h,i)perylene	ND	37

Surrogate	%REC	Limits
Nitrobenzene-d5	60	40-120
2-Fluorobiphenyl	65	46-120
Terphenyl-d14	75	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-02-04.0	Batch#:	229093
Lab ID:	271270-016	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 36%

Analyte	Result	RL
Naphthalene	ND	7.9
Acenaphthylene	ND	7.9
Acenaphthene	ND	7.9
Fluorene	ND	7.9
Phenanthrene	ND	7.9
Anthracene	ND	7.9
Fluoranthene	ND	7.9
Pyrene	ND	7.9
Benzo(a)anthracene	ND	7.9
Chrysene	ND	7.9
Benzo(b)fluoranthene	ND	7.9
Benzo(k)fluoranthene	ND	7.9
Benzo(a)pyrene	ND	7.9
Indeno(1,2,3-cd)pyrene	ND	7.9
Dibenz(a,h)anthracene	ND	7.9
Benzo(g,h,i)perylene	ND	7.9

Surrogate	%REC	Limits
Nitrobenzene-d5	63	40-120
2-Fluorobiphenyl	56	46-120
Terphenyl-d14	66	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-01-02.0	Batch#:	229093
Lab ID:	271270-017	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	3.000		

Moisture: 31%

Analyte	Result	RL
Naphthalene	ND	22
Acenaphthylene	ND	22
Acenaphthene	ND	22
Fluorene	ND	22
Phenanthrene	ND	22
Anthracene	ND	22
Fluoranthene	ND	22
Pyrene	ND	22
Benzo(a)anthracene	ND	22
Chrysene	ND	22
Benzo(b)fluoranthene	ND	22
Benzo(k)fluoranthene	ND	22
Benzo(a)pyrene	ND	22
Indeno(1,2,3-cd)pyrene	ND	22
Dibenz(a,h)anthracene	ND	22
Benzo(g,h,i)perylene	ND	22

Surrogate	%REC	Limits
Nitrobenzene-d5	56	40-120
2-Fluorobiphenyl	51	46-120
Terphenyl-d14	57	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-01-04.0	Batch#:	229116
Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 24%

Analyte	Result	RL
Naphthalene	ND	6.6
Acenaphthylene	ND	6.6
Acenaphthene	ND	6.6
Fluorene	ND	6.6
Phenanthrene	ND	6.6
Anthracene	ND	6.6
Fluoranthene	ND	6.6
Pyrene	ND	6.6
Benzo(a)anthracene	ND	6.6
Chrysene	ND	6.6
Benzo(b)fluoranthene	ND	6.6
Benzo(k)fluoranthene	ND	6.6
Benzo(a)pyrene	ND	6.6
Indeno(1,2,3-cd)pyrene	ND	6.6
Dibenz(a,h)anthracene	ND	6.6
Benzo(g,h,i)perylene	ND	6.6

Surrogate	%REC	Limits
Nitrobenzene-d5	43	40-120
2-Fluorobiphenyl	52	46-120
Terphenyl-d14	67	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-10-02.0	Batch#:	229116
Lab ID:	271270-019	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 38%

Analyte	Result	RL
Naphthalene	ND	8.2
Acenaphthylene	ND	8.2
Acenaphthene	ND	8.2
Fluorene	ND	8.2
Phenanthrene	ND	8.2
Anthracene	ND	8.2
Fluoranthene	ND	8.2
Pyrene	ND	8.2
Benzo(a)anthracene	ND	8.2
Chrysene	ND	8.2
Benzo(b)fluoranthene	ND	8.2
Benzo(k)fluoranthene	ND	8.2
Benzo(a)pyrene	ND	8.2
Indeno(1,2,3-cd)pyrene	ND	8.2
Dibenz(a,h)anthracene	ND	8.2
Benzo(g,h,i)perylene	ND	8.2

Surrogate	%REC	Limits
Nitrobenzene-d5	58	40-120
2-Fluorobiphenyl	60	46-120
Terphenyl-d14	67	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-09-01.0	Batch#:	229116
Lab ID:	271270-020	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 42%

Analyte	Result	RL
Naphthalene	ND	8.7
Acenaphthylene	ND	8.7
Acenaphthene	ND	8.7
Fluorene	ND	8.7
Phenanthrene	ND	8.7
Anthracene	ND	8.7
Fluoranthene	ND	8.7
Pyrene	ND	8.7
Benzo(a)anthracene	ND	8.7
Chrysene	ND	8.7
Benzo(b)fluoranthene	ND	8.7
Benzo(k)fluoranthene	ND	8.7
Benzo(a)pyrene	ND	8.7
Indeno(1,2,3-cd)pyrene	ND	8.7
Dibenz(a,h)anthracene	ND	8.7
Benzo(g,h,i)perylene	ND	8.7

Surrogate	%REC	Limits
Nitrobenzene-d5	55	40-120
2-Fluorobiphenyl	56	46-120
Terphenyl-d14	64	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-09-04.5	Batch#:	229116
Lab ID:	271270-021	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	3.000		

Moisture: 49%

Analyte	Result	RL
Naphthalene	ND	30
Acenaphthylene	ND	30
Acenaphthene	ND	30
Fluorene	ND	30
Phenanthrene	ND	30
Anthracene	ND	30
Fluoranthene	ND	30
Pyrene	ND	30
Benzo(a)anthracene	ND	30
Chrysene	ND	30
Benzo(b)fluoranthene	ND	30
Benzo(k)fluoranthene	ND	30
Benzo(a)pyrene	ND	30
Indeno(1,2,3-cd)pyrene	ND	30
Dibenz(a,h)anthracene	ND	30
Benzo(g,h,i)perylene	ND	30

Surrogate	%REC	Limits
Nitrobenzene-d5	53	40-120
2-Fluorobiphenyl	56	46-120
Terphenyl-d14	56	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-12-15.0	Batch#:	229116
Lab ID:	271270-022	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	3.000		

Moisture: 49%

Analyte	Result	RL
Naphthalene	ND	29
Acenaphthylene	ND	29
Acenaphthene	ND	29
Fluorene	ND	29
Phenanthrene	ND	29
Anthracene	ND	29
Fluoranthene	ND	29
Pyrene	ND	29
Benzo(a)anthracene	ND	29
Chrysene	ND	29
Benzo(b)fluoranthene	ND	29
Benzo(k)fluoranthene	ND	29
Benzo(a)pyrene	ND	29
Indeno(1,2,3-cd)pyrene	ND	29
Dibenz(a,h)anthracene	ND	29
Benzo(g,h,i)perylene	ND	29

Surrogate	%REC	Limits
Nitrobenzene-d5	55	40-120
2-Fluorobiphenyl	61	46-120
Terphenyl-d14	65	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-12-25.0	Batch#:	229116
Lab ID:	271270-023	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 42%

Analyte	Result	RL
Naphthalene	ND	8.6
Acenaphthylene	ND	8.6
Acenaphthene	ND	8.6
Fluorene	ND	8.6
Phenanthrene	ND	8.6
Anthracene	ND	8.6
Fluoranthene	ND	8.6
Pyrene	ND	8.6
Benzo(a)anthracene	ND	8.6
Chrysene	ND	8.6
Benzo(b)fluoranthene	ND	8.6
Benzo(k)fluoranthene	ND	8.6
Benzo(a)pyrene	ND	8.6
Indeno(1,2,3-cd)pyrene	ND	8.6
Dibenz(a,h)anthracene	ND	8.6
Benzo(g,h,i)perylene	ND	8.6

Surrogate	%REC	Limits
Nitrobenzene-d5	75	40-120
2-Fluorobiphenyl	61	46-120
Terphenyl-d14	70	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-11-15.0	Batch#:	229116
Lab ID:	271270-024	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	5.000		

Moisture: 46%

Analyte	Result	RL
Naphthalene	ND	47
Acenaphthylene	ND	47
Acenaphthene	ND	47
Fluorene	ND	47
Phenanthrene	ND	47
Anthracene	ND	47
Fluoranthene	ND	47
Pyrene	ND	47
Benzo(a)anthracene	ND	47
Chrysene	ND	47
Benzo(b)fluoranthene	ND	47
Benzo(k)fluoranthene	ND	47
Benzo(a)pyrene	ND	47
Indeno(1,2,3-cd)pyrene	ND	47
Dibenz(a,h)anthracene	ND	47
Benzo(g,h,i)perylene	ND	47

Surrogate	%REC	Limits
Nitrobenzene-d5	59	40-120
2-Fluorobiphenyl	57	46-120
Terphenyl-d14	68	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-11-25.0	Batch#:	229116
Lab ID:	271270-025	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	5.000		

Moisture: 42%

Analyte	Result	RL
Naphthalene	ND	44
Acenaphthylene	ND	44
Acenaphthene	ND	44
Fluorene	ND	44
Phenanthrene	ND	44
Anthracene	ND	44
Fluoranthene	ND	44
Pyrene	ND	44
Benzo(a)anthracene	ND	44
Chrysene	ND	44
Benzo(b)fluoranthene	ND	44
Benzo(k)fluoranthene	ND	44
Benzo(a)pyrene	ND	44
Indeno(1,2,3-cd)pyrene	ND	44
Dibenz(a,h)anthracene	ND	44
Benzo(g,h,i)perylene	ND	44

Surrogate	%REC	Limits
Nitrobenzene-d5	71	40-120
2-Fluorobiphenyl	70	46-120
Terphenyl-d14	85	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-13-15.0	Batch#:	229116
Lab ID:	271270-026	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	5.000		

Moisture: 47%

Analyte	Result	RL
Naphthalene	ND	47
Acenaphthylene	ND	47
Acenaphthene	ND	47
Fluorene	ND	47
Phenanthrene	ND	47
Anthracene	ND	47
Fluoranthene	ND	47
Pyrene	ND	47
Benzo(a)anthracene	ND	47
Chrysene	ND	47
Benzo(b)fluoranthene	ND	47
Benzo(k)fluoranthene	ND	47
Benzo(a)pyrene	ND	47
Indeno(1,2,3-cd)pyrene	ND	47
Dibenz(a,h)anthracene	ND	47
Benzo(g,h,i)perylene	ND	47

Surrogate	%REC	Limits
Nitrobenzene-d5	54	40-120
2-Fluorobiphenyl	58	46-120
Terphenyl-d14	69	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-13-30.0	Batch#:	229116
Lab ID:	271270-027	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 46%

Analyte	Result	RL
Naphthalene	ND	9.3
Acenaphthylene	ND	9.3
Acenaphthene	ND	9.3
Fluorene	ND	9.3
Phenanthrene	ND	9.3
Anthracene	ND	9.3
Fluoranthene	ND	9.3
Pyrene	ND	9.3
Benzo(a)anthracene	ND	9.3
Chrysene	ND	9.3
Benzo(b)fluoranthene	ND	9.3
Benzo(k)fluoranthene	ND	9.3
Benzo(a)pyrene	ND	9.3
Indeno(1,2,3-cd)pyrene	ND	9.3
Dibenz(a,h)anthracene	ND	9.3
Benzo(g,h,i)perylene	ND	9.3

Surrogate	%REC	Limits
Nitrobenzene-d5	84	40-120
2-Fluorobiphenyl	67	46-120
Terphenyl-d14	75	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-13-45.0	Batch#:	229116
Lab ID:	271270-028	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 21%

Analyte	Result	RL
Naphthalene	ND	6.3
Acenaphthylene	ND	6.3
Acenaphthene	ND	6.3
Fluorene	ND	6.3
Phenanthrene	ND	6.3
Anthracene	ND	6.3
Fluoranthene	ND	6.3
Pyrene	ND	6.3
Benzo(a)anthracene	ND	6.3
Chrysene	ND	6.3
Benzo(b)fluoranthene	ND	6.3
Benzo(k)fluoranthene	ND	6.3
Benzo(a)pyrene	ND	6.3
Indeno(1,2,3-cd)pyrene	ND	6.3
Dibenz(a,h)anthracene	ND	6.3
Benzo(g,h,i)perylene	ND	6.3

Surrogate	%REC	Limits
Nitrobenzene-d5	67	40-120
2-Fluorobiphenyl	53	46-120
Terphenyl-d14	63	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	IE-13-60.0	Batch#:	229116
Lab ID:	271270-029	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Moisture: 25%

Analyte	Result	RL
Naphthalene	ND	6.7
Acenaphthylene	ND	6.7
Acenaphthene	ND	6.7
Fluorene	ND	6.7
Phenanthrene	ND	6.7
Anthracene	ND	6.7
Fluoranthene	ND	6.7
Pyrene	ND	6.7
Benzo(a)anthracene	ND	6.7
Chrysene	ND	6.7
Benzo(b)fluoranthene	ND	6.7
Benzo(k)fluoranthene	ND	6.7
Benzo(a)pyrene	ND	6.7
Indeno(1,2,3-cd)pyrene	ND	6.7
Dibenz(a,h)anthracene	ND	6.7
Benzo(g,h,i)perylene	ND	6.7

Surrogate	%REC	Limits
Nitrobenzene-d5	86	40-120
2-Fluorobiphenyl	68	46-120
Terphenyl-d14	84	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811370	Batch#:	229093
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/05/15

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	70	40-120
2-Fluorobiphenyl	69	46-120
Terphenyl-d14	92	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811371	Batch#:	229093
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/05/15

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	33.66	23.75	71	49-120
Pyrene	33.66	30.37	90	48-120

Surrogate	%REC	Limits
Nitrobenzene-d5	66	40-120
2-Fluorobiphenyl	65	46-120
Terphenyl-d14	84	43-120

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	ZZZZZZZZZZ	Batch#:	229093
MSS Lab ID:	271290-001	Sampled:	11/04/15
Matrix:	Soil	Received:	11/04/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	as received	Analyzed:	11/08/15
Diln Fac:	1.000		

Type: MS Lab ID: QC811372

Analyte	MSS Result	Spiked	Result	%REC	Limits
Acenaphthene	<1.002	33.31	21.35	64	43-120
Pyrene	16.76	33.31	28.54	35	18-144

Surrogate	%REC	Limits
Nitrobenzene-d5	77	40-120
2-Fluorobiphenyl	55	46-120
Terphenyl-d14	57	43-120

Type: MSD Lab ID: QC811373

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	33.84	23.84	70	43-120	9	45
Pyrene	33.84	24.04	22	18-144	18	72

Surrogate	%REC	Limits
Nitrobenzene-d5	80	40-120
2-Fluorobiphenyl	62	46-120
Terphenyl-d14	64	43-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811465	Batch#:	229116
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/06/15

Analyte	Result	RL
Naphthalene	ND	5.1
Acenaphthylene	ND	5.1
Acenaphthene	ND	5.1
Fluorene	ND	5.1
Phenanthrene	ND	5.1
Anthracene	ND	5.1
Fluoranthene	ND	5.1
Pyrene	ND	5.1
Benzo(a)anthracene	ND	5.1
Chrysene	ND	5.1
Benzo(b)fluoranthene	ND	5.1
Benzo(k)fluoranthene	ND	5.1
Benzo(a)pyrene	ND	5.1
Indeno(1,2,3-cd)pyrene	ND	5.1
Dibenz(a,h)anthracene	ND	5.1
Benzo(g,h,i)perylene	ND	5.1

Surrogate	%REC	Limits
Nitrobenzene-d5	59	40-120
2-Fluorobiphenyl	62	46-120
Terphenyl-d14	66	43-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811466	Batch#:	229116
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/06/15

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	33.64	24.82	74	49-120
Pyrene	33.64	25.81	77	48-120

Surrogate	%REC	Limits
Nitrobenzene-d5	64	40-120
2-Fluorobiphenyl	65	46-120
Terphenyl-d14	69	43-120

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8270C-SIM
Field ID:	ZZZZZZZZZZ	Batch#:	229116
MSS Lab ID:	271269-007	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Type: MS Moisture: 32%
Lab ID: QC811467

Analyte	MSS Result	Spiked	Result	%REC	Limits
Acenaphthene	<1.488	49.13	35.04	71	43-120
Pyrene	15.85	49.13	53.16	76	18-144

Surrogate	%REC	Limits
Nitrobenzene-d5	85	40-120
2-Fluorobiphenyl	66	46-120
Terphenyl-d14	74	43-120

Type: MSD Moisture: 32%
Lab ID: QC811468

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	49.65	38.23	77	43-120	8	45
Pyrene	49.65	64.93	99	18-144	19	72

Surrogate	%REC	Limits
Nitrobenzene-d5	89	40-120
2-Fluorobiphenyl	69	46-120
Terphenyl-d14	77	43-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-10-04.0	Batch#:	229055
Lab ID:	271270-001	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 34%

Analyte	Result	RL
alpha-BHC	ND	2.5
beta-BHC	ND	2.5
gamma-BHC	ND	2.5
delta-BHC	ND	2.5
Heptachlor	ND	2.5
Aldrin	ND	2.5
Heptachlor epoxide	ND	2.5
Endosulfan I	ND	2.5
Dieldrin	ND	2.5
4,4'-DDE	ND	4.9
Endrin	ND	4.9
Endosulfan II	ND	4.9
Endosulfan sulfate	ND	4.9
4,4'-DDD	ND	4.9
Endrin aldehyde	ND	4.9
4,4'-DDT	ND	4.9
alpha-Chlordane	ND	2.5
gamma-Chlordane	ND	2.5
Methoxychlor	ND	25
Toxaphene	ND	89

Surrogate	%REC	Limits
TCMX	71	44-125
Decachlorobiphenyl	91	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-04-02.0	Batch#:	229055
Lab ID:	271270-002	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 44%

Analyte	Result	RL
alpha-BHC	ND	3.0
beta-BHC	ND	3.0
gamma-BHC	ND	3.0
delta-BHC	ND	3.0
Heptachlor	ND	3.0
Aldrin	ND	3.0
Heptachlor epoxide	ND	3.0
Endosulfan I	ND	3.0
Dieldrin	ND	3.0
4,4'-DDE	ND	5.9
Endrin	ND	5.9
Endosulfan II	ND	5.9
Endosulfan sulfate	ND	5.9
4,4'-DDD	ND	5.9
Endrin aldehyde	ND	5.9
4,4'-DDT	ND	5.9
alpha-Chlordane	ND	3.0
gamma-Chlordane	ND	3.0
Methoxychlor	ND	30
Toxaphene	ND	110

Surrogate	%REC	Limits
TCMX	68	44-125
Decachlorobiphenyl	93	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-04-04.0	Batch#:	229055
Lab ID:	271270-003	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/10/15
Diln Fac:	5.000		

Moisture: 41%

Analyte	Result	RL
alpha-BHC	ND	14
beta-BHC	ND	14
gamma-BHC	ND	14
delta-BHC	ND	14
Heptachlor	ND	14
Aldrin	ND	14
Heptachlor epoxide	ND	14
Endosulfan I	ND	14
Dieldrin	ND	14
4,4'-DDE	ND	28
Endrin	ND	28
Endosulfan II	ND	28
Endosulfan sulfate	ND	28
4,4'-DDD	ND	28
Endrin aldehyde	ND	28
4,4'-DDT	ND	28
alpha-Chlordane	ND	14
gamma-Chlordane	ND	14
Methoxychlor	ND	140
Toxaphene	ND	510

Surrogate	%REC	Limits
TCMX	75	44-125
Decachlorobiphenyl	65	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-07-02.0	Batch#:	229055
Lab ID:	271270-004	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 43%

Analyte	Result	RL
alpha-BHC	ND	3.0
beta-BHC	ND	3.0
gamma-BHC	ND	3.0
delta-BHC	ND	3.0
Heptachlor	ND	3.0
Aldrin	ND	3.0
Heptachlor epoxide	ND	3.0
Endosulfan I	ND	3.0
Dieldrin	ND	3.0
4,4'-DDE	ND	5.8
Endrin	ND	5.8
Endosulfan II	ND	5.8
Endosulfan sulfate	ND	5.8
4,4'-DDD	ND	5.8
Endrin aldehyde	ND	5.8
4,4'-DDT	ND	5.8
alpha-Chlordane	ND	3.0
gamma-Chlordane	ND	3.0
Methoxychlor	ND	30
Toxaphene	ND	100

Surrogate	%REC	Limits
TCMX	69	44-125
Decachlorobiphenyl	95	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-07-04.0	Batch#:	229055
Lab ID:	271270-005	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 42%

Analyte	Result	RL
alpha-BHC	ND	2.9
beta-BHC	ND	2.9
gamma-BHC	ND	2.9
delta-BHC	ND	2.9
Heptachlor	ND	2.9
Aldrin	ND	2.9
Heptachlor epoxide	ND	2.9
Endosulfan I	ND	2.9
Dieldrin	ND	2.9
4,4'-DDE	ND	5.7
Endrin	ND	5.7
Endosulfan II	ND	5.7
Endosulfan sulfate	ND	5.7
4,4'-DDD	ND	5.7
Endrin aldehyde	ND	5.7
4,4'-DDT	ND	5.7
alpha-Chlordane	ND	2.9
gamma-Chlordane	ND	2.9
Methoxychlor	ND	29
Toxaphene	ND	100

Surrogate	%REC	Limits
TCMX	74	44-125
Decachlorobiphenyl	99	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-06-02.0	Batch#:	229055
Lab ID:	271270-006	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	5.000		

Moisture: 32%

Analyte	Result	RL
alpha-BHC	ND	13
beta-BHC	ND	13
gamma-BHC	ND	13
delta-BHC	ND	13
Heptachlor	ND	13
Aldrin	ND	13
Heptachlor epoxide	ND	13
Endosulfan I	ND	13
Dieldrin	ND	13
4,4'-DDE	ND	24
Endrin	ND	24
Endosulfan II	ND	24
Endosulfan sulfate	ND	24
4,4'-DDD	ND	24
Endrin aldehyde	ND	24
4,4'-DDT	ND	24
alpha-Chlordane	ND	13
gamma-Chlordane	ND	13
Methoxychlor	ND	130
Toxaphene	ND	450

Surrogate	%REC	Limits
TCMX	94	44-125
Decachlorobiphenyl	121	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-06-04.0	Batch#:	229055
Lab ID:	271270-007	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
alpha-BHC	ND	2.7
beta-BHC	ND	2.7
gamma-BHC	ND	2.7
delta-BHC	ND	2.7
Heptachlor	ND	2.7
Aldrin	ND	2.7
Heptachlor epoxide	ND	2.7
Endosulfan I	ND	2.7
Dieldrin	ND	2.7
4,4'-DDE	ND	5.3
Endrin	ND	5.3
Endosulfan II	ND	5.3
Endosulfan sulfate	ND	5.3
4,4'-DDD	ND	5.3
Endrin aldehyde	ND	5.3
4,4'-DDT	ND	5.3
alpha-Chlordane	ND	2.7
gamma-Chlordane	ND	2.7
Methoxychlor	ND	27
Toxaphene	ND	97

Surrogate	%REC	Limits
TCMX	84	44-125
Decachlorobiphenyl	108	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-05-02.0	Batch#:	229055
Lab ID:	271270-008	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 41%

Analyte	Result	RL
alpha-BHC	ND	2.8
beta-BHC	ND	2.8
gamma-BHC	ND	2.8
delta-BHC	ND	2.8
Heptachlor	ND	2.8
Aldrin	ND	2.8
Heptachlor epoxide	ND	2.8
Endosulfan I	ND	2.8
Dieldrin	ND	2.8
4,4'-DDE	ND	5.5
Endrin	ND	5.5
Endosulfan II	ND	5.5
Endosulfan sulfate	ND	5.5
4,4'-DDD	ND	5.5
Endrin aldehyde	ND	5.5
4,4'-DDT	ND	5.5
alpha-Chlordane	ND	2.8
gamma-Chlordane	ND	2.8
Methoxychlor	ND	28
Toxaphene	ND	100

Surrogate	%REC	Limits
TCMX	85	44-125
Decachlorobiphenyl	118	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-05-04.0	Batch#:	229055
Lab ID:	271270-009	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
alpha-BHC	ND	2.8
beta-BHC	ND	2.8
gamma-BHC	ND	2.8
delta-BHC	ND	2.8
Heptachlor	ND	2.8
Aldrin	ND	2.8
Heptachlor epoxide	ND	2.8
Endosulfan I	ND	2.8
Dieldrin	ND	2.8
4,4'-DDE	ND	5.4
Endrin	ND	5.4
Endosulfan II	ND	5.4
Endosulfan sulfate	ND	5.4
4,4'-DDD	ND	5.4
Endrin aldehyde	ND	5.4
4,4'-DDT	ND	5.4
alpha-Chlordane	ND	2.8
gamma-Chlordane	ND	2.8
Methoxychlor	ND	28
Toxaphene	ND	98

Surrogate	%REC	Limits
TCMX	68	44-125
Decachlorobiphenyl	99	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-13-75.0	Batch#:	229123
Lab ID:	271270-010	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 18%

Analyte	Result	RL
alpha-BHC	ND	2.0
beta-BHC	ND	2.0
gamma-BHC	ND	2.0
delta-BHC	ND	2.0
Heptachlor	ND	2.0
Aldrin	ND	2.0
Heptachlor epoxide	ND	2.0
Endosulfan I	ND	2.0
Dieldrin	ND	2.0
4,4'-DDE	ND	4.0
Endrin	ND	4.0
Endosulfan II	ND	4.0
Endosulfan sulfate	ND	4.0
4,4'-DDD	ND	4.0
Endrin aldehyde	ND	4.0
4,4'-DDT	ND	4.0
alpha-Chlordane	ND	2.0
gamma-Chlordane	ND	2.0
Methoxychlor	ND	20
Toxaphene	ND	72

Surrogate	%REC	Limits
TCMX	75	44-125
Decachlorobiphenyl	104	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-03-02.0	Batch#:	229123
Lab ID:	271270-011	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 39%

Analyte	Result	RL
alpha-BHC	ND	2.8
beta-BHC	ND	2.8
gamma-BHC	ND	2.8
delta-BHC	ND	2.8
Heptachlor	ND	2.8
Aldrin	ND	2.8
Heptachlor epoxide	ND	2.8
Endosulfan I	ND	2.8
Dieldrin	ND	2.8
4,4'-DDE	ND	5.4
Endrin	ND	5.4
Endosulfan II	ND	5.4
Endosulfan sulfate	ND	5.4
4,4'-DDD	ND	5.4
Endrin aldehyde	ND	5.4
4,4'-DDT	ND	5.4
alpha-Chlordane	ND	2.8
gamma-Chlordane	ND	2.8
Methoxychlor	ND	28
Toxaphene	ND	98

Surrogate	%REC	Limits
TCMX	90	44-125
Decachlorobiphenyl	91	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-03-04.0	Batch#:	229123
Lab ID:	271270-012	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	2.000		

Moisture: 45%

Analyte	Result	RL
alpha-BHC	ND	6.2
beta-BHC	ND	6.2
gamma-BHC	ND	6.2
delta-BHC	ND	6.2
Heptachlor	ND	6.2
Aldrin	ND	6.2
Heptachlor epoxide	ND	6.2
Endosulfan I	ND	6.2
Dieldrin	ND	6.2
4,4'-DDE	ND	12
Endrin	ND	12
Endosulfan II	ND	12
Endosulfan sulfate	ND	12
4,4'-DDD	ND	12
Endrin aldehyde	ND	12
4,4'-DDT	ND	12
alpha-Chlordane	ND	6.2
gamma-Chlordane	ND	6.2
Methoxychlor	ND	62
Toxaphene	ND	220

Surrogate	%REC	Limits
TCMX	67	44-125
Decachlorobiphenyl	89	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-08-02.0	Batch#:	229123
Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	2.000		

Moisture: 45%

Analyte	Result	RL
alpha-BHC	ND	6.1
beta-BHC	ND	6.1
gamma-BHC	ND	6.1
delta-BHC	ND	6.1
Heptachlor	ND	6.1
Aldrin	ND	6.1
Heptachlor epoxide	ND	6.1
Endosulfan I	ND	6.1
Dieldrin	ND	6.1
4,4'-DDE	ND	12
Endrin	ND	12
Endosulfan II	ND	12
Endosulfan sulfate	ND	12
4,4'-DDD	ND	12
Endrin aldehyde	ND	12
4,4'-DDT	ND	12
alpha-Chlordane	ND	6.1
gamma-Chlordane	ND	6.1
Methoxychlor	ND	61
Toxaphene	ND	220

Surrogate	%REC	Limits
TCMX	77	44-125
Decachlorobiphenyl	110	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-08-04.0	Batch#:	229123
Lab ID:	271270-014	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	2.000		

Moisture: 46%

Analyte	Result	RL
alpha-BHC	ND	6.3
beta-BHC	ND	6.3
gamma-BHC	ND	6.3
delta-BHC	ND	6.3
Heptachlor	ND	6.3
Aldrin	ND	6.3
Heptachlor epoxide	ND	6.3
Endosulfan I	ND	6.3
Dieldrin	ND	6.3
4,4'-DDE	ND	12
Endrin	ND	12
Endosulfan II	ND	12
Endosulfan sulfate	ND	12
4,4'-DDD	ND	12
Endrin aldehyde	ND	12
4,4'-DDT	ND	12
alpha-Chlordane	ND	6.3
gamma-Chlordane	ND	6.3
Methoxychlor	ND	63
Toxaphene	ND	220

Surrogate	%REC	Limits
TCMX	76	44-125
Decachlorobiphenyl	105	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-02-02.0	Batch#:	229123
Lab ID:	271270-015	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	2.000		

Moisture: 33%

Analyte	Result	RL
alpha-BHC	ND	5.1
beta-BHC	34 C	5.1
gamma-BHC	ND	5.1
delta-BHC	ND	5.1
Heptachlor	ND	5.1
Aldrin	ND	5.1
Heptachlor epoxide	ND	5.1
Endosulfan I	ND	5.1
Dieldrin	ND	5.1
4,4'-DDE	ND	9.8
Endrin	ND	9.8
Endosulfan II	ND	9.8
Endosulfan sulfate	ND	9.8
4,4'-DDD	ND	9.8
Endrin aldehyde	ND	9.8
4,4'-DDT	ND	9.8
alpha-Chlordane	ND	5.1
gamma-Chlordane	ND	5.1
Methoxychlor	ND	51
Toxaphene	ND	180

Surrogate	%REC	Limits
TCMX	93	44-125
Decachlorobiphenyl	120	39-121

C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-02-04.0	Batch#:	229123
Lab ID:	271270-016	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 36%

Analyte	Result	RL
alpha-BHC	ND	2.7
beta-BHC	ND	2.7
gamma-BHC	ND	2.7
delta-BHC	ND	2.7
Heptachlor	ND	2.7
Aldrin	ND	2.7
Heptachlor epoxide	ND	2.7
Endosulfan I	ND	2.7
Dieldrin	ND	2.7
4,4'-DDE	ND	5.1
Endrin	ND	5.1
Endosulfan II	ND	5.1
Endosulfan sulfate	ND	5.1
4,4'-DDD	ND	5.1
Endrin aldehyde	ND	5.1
4,4'-DDT	ND	5.1
alpha-Chlordane	ND	2.7
gamma-Chlordane	ND	2.7
Methoxychlor	ND	27
Toxaphene	ND	94

Surrogate	%REC	Limits
TCMX	56	44-125
Decachlorobiphenyl	94	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-01-02.0	Batch#:	229123
Lab ID:	271270-017	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	2.000		

Moisture: 31%

Analyte	Result	RL
alpha-BHC	ND	4.9
beta-BHC	ND	4.9
gamma-BHC	ND	4.9
delta-BHC	ND	4.9
Heptachlor	ND	4.9
Aldrin	ND	4.9
Heptachlor epoxide	ND	4.9
Endosulfan I	ND	4.9
Dieldrin	ND	4.9
4,4'-DDE	ND	9.5
Endrin	ND	9.5
Endosulfan II	ND	9.5
Endosulfan sulfate	ND	9.5
4,4'-DDD	ND	9.5
Endrin aldehyde	ND	9.5
4,4'-DDT	ND	9.5
alpha-Chlordane	ND	4.9
gamma-Chlordane	ND	4.9
Methoxychlor	ND	49
Toxaphene	ND	170

Surrogate	%REC	Limits
TCMX	85	44-125
Decachlorobiphenyl	118	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-01-04.0	Batch#:	229123
Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	10.00		

Moisture: 24%

Analyte	Result	RL
alpha-BHC	ND	22
beta-BHC	ND	22
gamma-BHC	ND	22
delta-BHC	ND	22
Heptachlor	ND	22
Aldrin	ND	22
Heptachlor epoxide	ND	22
Endosulfan I	ND	22
Dieldrin	ND	22
4,4'-DDE	ND	43
Endrin	ND	43
Endosulfan II	ND	43
Endosulfan sulfate	ND	43
4,4'-DDD	ND	43
Endrin aldehyde	ND	43
4,4'-DDT	ND	43
alpha-Chlordane	ND	22
gamma-Chlordane	ND	22
Methoxychlor	ND	220
Toxaphene	ND	790

Surrogate	%REC	Limits
TCMX	DO	44-125
Decachlorobiphenyl	DO	39-121

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-10-02.0	Batch#:	229123
Lab ID:	271270-019	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 38%

Analyte	Result	RL
alpha-BHC	ND	2.7
beta-BHC	3.5	2.7
gamma-BHC	ND	2.7
delta-BHC	ND	2.7
Heptachlor	ND	2.7
Aldrin	ND	2.7
Heptachlor epoxide	ND	2.7
Endosulfan I	ND	2.7
Dieldrin	ND	2.7
4,4'-DDE	ND	5.3
Endrin	ND	5.3
Endosulfan II	ND	5.3
Endosulfan sulfate	ND	5.3
4,4'-DDD	ND	5.3
Endrin aldehyde	ND	5.3
4,4'-DDT	ND	5.3
alpha-Chlordane	ND	2.7
gamma-Chlordane	ND	2.7
Methoxychlor	ND	27
Toxaphene	ND	97

Surrogate	%REC	Limits
TCMX	75	44-125
Decachlorobiphenyl	90	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-09-01.0	Batch#:	229123
Lab ID:	271270-020	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	1.000		

Moisture: 42%

Analyte	Result	RL
alpha-BHC	ND	3.0
beta-BHC	ND	3.0
gamma-BHC	ND	3.0
delta-BHC	ND	3.0
Heptachlor	ND	3.0
Aldrin	ND	3.0
Heptachlor epoxide	ND	3.0
Endosulfan I	ND	3.0
Dieldrin	ND	3.0
4,4'-DDE	ND	5.7
Endrin	ND	5.7
Endosulfan II	ND	5.7
Endosulfan sulfate	ND	5.7
4,4'-DDD	ND	5.7
Endrin aldehyde	ND	5.7
4,4'-DDT	ND	5.7
alpha-Chlordane	ND	3.0
gamma-Chlordane	ND	3.0
Methoxychlor	ND	30
Toxaphene	ND	100

Surrogate	%REC	Limits
TCMX	57	44-125
Decachlorobiphenyl	106	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-09-04.5	Batch#:	229123
Lab ID:	271270-021	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	3.000		

Moisture: 49%

Analyte	Result	RL
alpha-BHC	ND	10
beta-BHC	ND	10
gamma-BHC	ND	10
delta-BHC	ND	10
Heptachlor	ND	10
Aldrin	ND	10
Heptachlor epoxide	ND	10
Endosulfan I	ND	10
Dieldrin	ND	10
4,4'-DDE	ND	19
Endrin	ND	19
Endosulfan II	ND	19
Endosulfan sulfate	ND	19
4,4'-DDD	ND	19
Endrin aldehyde	ND	19
4,4'-DDT	ND	19
alpha-Chlordane	ND	10
gamma-Chlordane	ND	10
Methoxychlor	ND	100
Toxaphene	ND	350

Surrogate	%REC	Limits
TCMX	96	44-125
Decachlorobiphenyl	129 *	39-121

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-12-15.0	Batch#:	229123
Lab ID:	271270-022	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	5.000		

Moisture: 49%

Analyte	Result	RL
alpha-BHC	ND	17
beta-BHC	ND	17
gamma-BHC	ND	17
delta-BHC	ND	17
Heptachlor	ND	17
Aldrin	ND	17
Heptachlor epoxide	ND	17
Endosulfan I	ND	17
Dieldrin	ND	17
4,4'-DDE	ND	32
Endrin	ND	32
Endosulfan II	ND	32
Endosulfan sulfate	ND	32
4,4'-DDD	ND	32
Endrin aldehyde	ND	32
4,4'-DDT	ND	32
alpha-Chlordane	ND	17
gamma-Chlordane	ND	17
Methoxychlor	ND	170
Toxaphene	ND	580

Surrogate	%REC	Limits
TCMX	81	44-125
Decachlorobiphenyl	115	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-12-25.0	Batch#:	229123
Lab ID:	271270-023	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	5.000		

Moisture: 42%

Analyte	Result	RL
alpha-BHC	ND	15
beta-BHC	ND	15
gamma-BHC	ND	15
delta-BHC	ND	15
Heptachlor	ND	15
Aldrin	ND	15
Heptachlor epoxide	ND	15
Endosulfan I	ND	15
Dieldrin	ND	15
4,4'-DDE	ND	28
Endrin	ND	28
Endosulfan II	ND	28
Endosulfan sulfate	ND	28
4,4'-DDD	ND	28
Endrin aldehyde	ND	28
4,4'-DDT	ND	28
alpha-Chlordane	ND	15
gamma-Chlordane	ND	15
Methoxychlor	ND	150
Toxaphene	ND	520

Surrogate	%REC	Limits
TCMX	190 *	44-125
Decachlorobiphenyl	125 *	39-121

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-11-15.0	Batch#:	229123
Lab ID:	271270-024	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/08/15
Diln Fac:	2.000		

Moisture: 46%

Analyte	Result	RL
alpha-BHC	ND	6.3
beta-BHC	ND	6.3
gamma-BHC	ND	6.3
delta-BHC	ND	6.3
Heptachlor	ND	6.3
Aldrin	ND	6.3
Heptachlor epoxide	ND	6.3
Endosulfan I	ND	6.3
Dieldrin	ND	6.3
4,4'-DDE	ND	12
Endrin	ND	12
Endosulfan II	ND	12
Endosulfan sulfate	ND	12
4,4'-DDD	ND	12
Endrin aldehyde	ND	12
4,4'-DDT	ND	12
alpha-Chlordane	ND	6.3
gamma-Chlordane	ND	6.3
Methoxychlor	ND	63
Toxaphene	ND	220

Surrogate	%REC	Limits
TCMX	81	44-125
Decachlorobiphenyl	106	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-11-25.0	Batch#:	229123
Lab ID:	271270-025	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/10/15
Diln Fac:	3.000		

Moisture: 42%

Analyte	Result	RL
alpha-BHC	ND	8.8
beta-BHC	ND	8.8
gamma-BHC	ND	8.8
delta-BHC	ND	8.8
Heptachlor	ND	8.8
Aldrin	ND	8.8
Heptachlor epoxide	ND	8.8
Endosulfan I	ND	8.8
Dieldrin	ND	8.8
4,4'-DDE	ND	17
Endrin	ND	17
Endosulfan II	ND	17
Endosulfan sulfate	ND	17
4,4'-DDD	ND	17
Endrin aldehyde	ND	17
4,4'-DDT	ND	17
alpha-Chlordane	ND	8.8
gamma-Chlordane	ND	8.8
Methoxychlor	ND	88
Toxaphene	ND	310

Surrogate	%REC	Limits
TCMX	94	44-125
Decachlorobiphenyl	96	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-13-15.0	Batch#:	229123
Lab ID:	271270-026	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/08/15
Diln Fac:	5.000		

Moisture: 47%

Analyte	Result	RL
alpha-BHC	ND	16
beta-BHC	ND	16
gamma-BHC	ND	16
delta-BHC	ND	16
Heptachlor	ND	16
Aldrin	ND	16
Heptachlor epoxide	ND	16
Endosulfan I	ND	16
Dieldrin	ND	16
4,4'-DDE	ND	31
Endrin	ND	31
Endosulfan II	ND	31
Endosulfan sulfate	ND	31
4,4'-DDD	ND	31
Endrin aldehyde	ND	31
4,4'-DDT	ND	31
alpha-Chlordane	ND	16
gamma-Chlordane	ND	16
Methoxychlor	ND	160
Toxaphene	ND	560

Surrogate	%REC	Limits
TCMX	92	44-125
Decachlorobiphenyl	138 *	39-121

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-13-30.0	Batch#:	229123
Lab ID:	271270-027	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/08/15
Diln Fac:	5.000		

Moisture: 46%

Analyte	Result	RL
alpha-BHC	ND	16
beta-BHC	ND	16
gamma-BHC	ND	16
delta-BHC	ND	16
Heptachlor	ND	16
Aldrin	ND	16
Heptachlor epoxide	ND	16
Endosulfan I	ND	16
Dieldrin	ND	16
4,4'-DDE	ND	31
Endrin	ND	31
Endosulfan II	ND	31
Endosulfan sulfate	ND	31
4,4'-DDD	ND	31
Endrin aldehyde	ND	31
4,4'-DDT	ND	31
alpha-Chlordane	ND	16
gamma-Chlordane	ND	16
Methoxychlor	ND	160
Toxaphene	ND	560

Surrogate	%REC	Limits
TCMX	90	44-125
Decachlorobiphenyl	135 *	39-121

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-13-45.0	Batch#:	229123
Lab ID:	271270-028	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/08/15
Diln Fac:	1.000		

Moisture: 21%

Analyte	Result	RL
alpha-BHC	ND	2.2
beta-BHC	ND	2.2
gamma-BHC	ND	2.2
delta-BHC	ND	2.2
Heptachlor	ND	2.2
Aldrin	ND	2.2
Heptachlor epoxide	ND	2.2
Endosulfan I	ND	2.2
Dieldrin	ND	2.2
4,4'-DDE	ND	4.2
Endrin	ND	4.2
Endosulfan II	ND	4.2
Endosulfan sulfate	ND	4.2
4,4'-DDD	ND	4.2
Endrin aldehyde	ND	4.2
4,4'-DDT	ND	4.2
alpha-Chlordane	ND	2.2
gamma-Chlordane	ND	2.2
Methoxychlor	ND	22
Toxaphene	ND	76

Surrogate	%REC	Limits
TCMX	53	44-125
Decachlorobiphenyl	110	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-13-60.0	Batch#:	229123
Lab ID:	271270-029	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/08/15
Diln Fac:	1.000		

Moisture: 25%

Analyte	Result	RL
alpha-BHC	ND	2.3
beta-BHC	ND	2.3
gamma-BHC	ND	2.3
delta-BHC	ND	2.3
Heptachlor	ND	2.3
Aldrin	ND	2.3
Heptachlor epoxide	ND	2.3
Endosulfan I	ND	2.3
Dieldrin	ND	2.3
4,4'-DDE	ND	4.4
Endrin	ND	4.4
Endosulfan II	ND	4.4
Endosulfan sulfate	ND	4.4
4,4'-DDD	ND	4.4
Endrin aldehyde	ND	4.4
4,4'-DDT	ND	4.4
alpha-Chlordane	ND	2.3
gamma-Chlordane	ND	2.3
Methoxychlor	ND	23
Toxaphene	ND	80

Surrogate	%REC	Limits
TCMX	47	44-125
Decachlorobiphenyl	98	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811218	Batch#:	229055
Matrix:	Soil	Prepared:	11/04/15
Units:	ug/Kg	Analyzed:	11/06/15

Analyte	Result	RL
alpha-BHC	ND	0.85
beta-BHC	ND	0.85
gamma-BHC	ND	0.85
delta-BHC	ND	0.85
Heptachlor	ND	0.85
Aldrin	ND	0.85
Heptachlor epoxide	ND	0.85
Endosulfan I	ND	0.85
Dieldrin	ND	0.85
4,4'-DDE	ND	1.7
Endrin	ND	1.7
Endosulfan II	ND	1.7
Endosulfan sulfate	ND	1.7
4,4'-DDD	ND	1.7
Endrin aldehyde	ND	1.7
4,4'-DDT	ND	1.7
alpha-Chlordane	ND	0.85
gamma-Chlordane	ND	0.85
Methoxychlor	ND	8.5
Toxaphene	ND	30

Surrogate	%REC	Limits
TCMX	90	44-125
Decachlorobiphenyl	119	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811222	Batch#:	229055
Matrix:	Soil	Prepared:	11/04/15
Units:	ug/Kg	Analyzed:	11/06/15

Analyte	Spiked	Result	%REC	Limits
gamma-BHC	13.38	11.27	84	44-121
Heptachlor	13.38	11.73	88	45-129
Aldrin	13.38	11.56	86	45-120
Dieldrin	13.38	13.57 #	101	49-131
Endrin	13.38	13.94	104	43-135
4,4'-DDT	13.38	13.32	100	37-141

Surrogate	%REC	Limits
TCMX	83	44-125
Decachlorobiphenyl	113	39-121

#= CCV drift outside limits; average CCV drift within limits per method requirements

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	ZZZZZZZZZZ	Batch#:	229055
MSS Lab ID:	271240-018	Sampled:	11/02/15
Matrix:	Soil	Received:	11/02/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	2.000		

Type: MS Moisture: 16%
Lab ID: QC811223

Analyte	MSS Result	Spiked	Result	%REC	Limits
gamma-BHC	<0.2583	16.09	10.87	68	51-126
Heptachlor	<0.2290	16.09	12.32	77	53-135
Aldrin	<0.2449	16.09	11.17	69	52-121
Dieldrin	<0.4758	16.09	13.16 #	82	50-138
Endrin	<0.6699	16.09	14.18	88	41-156
4,4'-DDT	<0.5657	16.09	12.92	80	30-156

Surrogate	%REC	Limits
TCMX	71	44-125
Decachlorobiphenyl	76	39-121

Type: MSD Moisture: 16%
Lab ID: QC811224

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
gamma-BHC	15.90	15.94	100	51-126	39	40
Heptachlor	15.90	13.54	85	53-135	11	34
Aldrin	15.90	15.52	98	52-121	34	44
Dieldrin	15.90	19.16 #	120	50-138	38	38
Endrin	15.90	20.69	130	41-156	38	38
4,4'-DDT	15.90	18.79	118	30-156	38	58

Surrogate	%REC	Limits
TCMX	99	44-125
Decachlorobiphenyl	120	39-121

#= CCV drift outside limits; average CCV drift within limits per method requirements
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811489	Batch#:	229123
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/07/15

Analyte	Result	RL
alpha-BHC	ND	1.7
beta-BHC	ND	1.7
gamma-BHC	ND	1.7
delta-BHC	ND	1.7
Heptachlor	ND	1.7
Aldrin	ND	1.7
Heptachlor epoxide	ND	1.7
Endosulfan I	ND	1.7
Dieldrin	ND	1.7
4,4'-DDE	ND	3.3
Endrin	ND	3.3
Endosulfan II	ND	3.3
Endosulfan sulfate	ND	3.3
4,4'-DDD	ND	3.3
Endrin aldehyde	ND	3.3
4,4'-DDT	ND	3.3
alpha-Chlordane	ND	1.7
gamma-Chlordane	ND	1.7
Methoxychlor	ND	17
Toxaphene	ND	60

Surrogate	%REC	Limits
TCMX	57	44-125
Decachlorobiphenyl	97	39-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811493	Batch#:	229123
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/07/15

Analyte	Spiked	Result	%REC	Limits
gamma-BHC	13.32	9.479	71	44-121
Heptachlor	13.32	9.890	74	45-129
Aldrin	13.32	9.601	72	45-120
Dieldrin	13.32	12.28	92	49-131
Endrin	13.32	11.83	89	43-135
4,4'-DDT	13.32	13.29 #	100	37-141

Surrogate	%REC	Limits
TCMX	72	44-125
Decachlorobiphenyl	107	39-121

#= CCV drift outside limits; average CCV drift within limits per method requirements

Curtis & Tompkins, Ltd.

Batch QC Report

Organochlorine Pesticides

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8081A
Field ID:	IE-12-15.0	Batch#:	229123
MSS Lab ID:	271270-022	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/07/15
Diln Fac:	5.000		

Type: MS Moisture: 49%
Lab ID: QC811494

Analyte	MSS Result	Spiked	Result	%REC	Limits
gamma-BHC	<4.498	25.88	18.85	73	51-126
Heptachlor	<4.919	25.88	19.78	76	53-135
Aldrin	<4.868	25.88	19.30	75	52-121
Dieldrin	ND	25.88	25.76	100	50-138
Endrin	<9.070	25.88	22.41	87	41-156
4,4'-DDT	<8.300	25.88	25.54 #	99	30-156

Surrogate	%REC	Limits
TCMX	75	44-125
Decachlorobiphenyl	101	39-121

Type: MSD Moisture: 49%
Lab ID: QC811495

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
gamma-BHC	26.03	18.25	70	51-126	4	40
Heptachlor	26.03	19.19	74	53-135	4	34
Aldrin	26.03	21.00	81	52-121	8	44
Dieldrin	26.03	26.98	104	50-138	4	38
Endrin	26.03	25.00	96	41-156	10	38
4,4'-DDT	26.03	28.59 #	110	30-156	11	58

Surrogate	%REC	Limits
TCMX	63	44-125
Decachlorobiphenyl	115	39-121

#= CCV drift outside limits; average CCV drift within limits per method requirements
ND= Not Detected
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-10-04.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-001	Analyzed:	11/05/15
Moisture:	34%		

Analyte	Result	RL
Aroclor-1016	ND	14
Aroclor-1221	ND	29
Aroclor-1232	ND	14
Aroclor-1242	ND	14
Aroclor-1248	ND	14
Aroclor-1254	ND	14
Aroclor-1260	ND	14

Surrogate	%REC	Limits
TCMX	99	46-141
Decachlorobiphenyl	85	25-135

Field ID:	IE-04-02.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-002	Analyzed:	11/05/15
Moisture:	44%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	34
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	91	46-141
Decachlorobiphenyl	82	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-04-04.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-003	Analyzed:	11/05/15
Moisture:	41%		

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	32
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	ND	16
Aroclor-1254	ND	16
Aroclor-1260	ND	16

Surrogate	%REC	Limits
TCMX	101	46-141
Decachlorobiphenyl	83	25-135

Field ID:	IE-07-02.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-004	Analyzed:	11/05/15
Moisture:	43%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	33
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	78	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-07-04.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-005	Analyzed:	11/05/15
Moisture:	42%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	33
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	109	46-141
Decachlorobiphenyl	98	25-135

Field ID:	IE-06-02.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-006	Analyzed:	11/05/15
Moisture:	32%		

Analyte	Result	RL
Aroclor-1016	ND	14
Aroclor-1221	ND	29
Aroclor-1232	ND	14
Aroclor-1242	ND	14
Aroclor-1248	ND	14
Aroclor-1254	ND	14
Aroclor-1260	ND	14

Surrogate	%REC	Limits
TCMX	111	46-141
Decachlorobiphenyl	99	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-06-04.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-007	Analyzed:	11/05/15
Moisture:	39%		

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	31
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	ND	16
Aroclor-1254	ND	16
Aroclor-1260	ND	16

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	93	25-135

Field ID:	IE-05-02.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-008	Analyzed:	11/05/15
Moisture:	41%		

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	32
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	ND	16
Aroclor-1254	ND	16
Aroclor-1260	ND	16

Surrogate	%REC	Limits
TCMX	135	46-141
Decachlorobiphenyl	125	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-05-04.0	Batch#:	229055
Type:	SAMPLE	Prepared:	11/04/15
Lab ID:	271270-009	Analyzed:	11/05/15
Moisture:	39%		

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	31
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	ND	16
Aroclor-1254	ND	16
Aroclor-1260	ND	16

Surrogate	%REC	Limits
TCMX	104	46-141
Decachlorobiphenyl	98	25-135

Field ID:	IE-13-75.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-010	Analyzed:	11/06/15
Moisture:	18%		

Analyte	Result	RL
Aroclor-1016	ND	12
Aroclor-1221	ND	23
Aroclor-1232	ND	12
Aroclor-1242	ND	12
Aroclor-1248	ND	12
Aroclor-1254	ND	12
Aroclor-1260	ND	12

Surrogate	%REC	Limits
TCMX	108	46-141
Decachlorobiphenyl	100	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-03-02.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-011	Analyzed:	11/06/15
Moisture:	39%		

Analyte	Result	RL
Aroclor-1016	ND	16
Aroclor-1221	ND	31
Aroclor-1232	ND	16
Aroclor-1242	ND	16
Aroclor-1248	ND	16
Aroclor-1254	ND	16
Aroclor-1260	ND	16

Surrogate	%REC	Limits
TCMX	111	46-141
Decachlorobiphenyl	96	25-135

Field ID:	IE-03-04.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-012	Analyzed:	11/06/15
Moisture:	45%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	35
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	110	46-141
Decachlorobiphenyl	96	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-08-02.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-013	Analyzed:	11/06/15
Moisture:	45%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	35
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	108	46-141
Decachlorobiphenyl	92	25-135

Field ID:	IE-08-04.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-014	Analyzed:	11/06/15
Moisture:	46%		

Analyte	Result	RL
Aroclor-1016	ND	18
Aroclor-1221	ND	35
Aroclor-1232	ND	18
Aroclor-1242	ND	18
Aroclor-1248	ND	18
Aroclor-1254	ND	18
Aroclor-1260	ND	18

Surrogate	%REC	Limits
TCMX	109	46-141
Decachlorobiphenyl	95	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-02-02.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-015	Analyzed:	11/06/15
Moisture:	33%		

Analyte	Result	RL
Aroclor-1016	ND	14
Aroclor-1221	ND	29
Aroclor-1232	ND	14
Aroclor-1242	ND	14
Aroclor-1248	ND	14
Aroclor-1254	ND	14
Aroclor-1260	ND	14

Surrogate	%REC	Limits
TCMX	113	46-141
Decachlorobiphenyl	95	25-135

Field ID:	IE-02-04.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-016	Analyzed:	11/06/15
Moisture:	36%		

Analyte	Result	RL
Aroclor-1016	ND	15
Aroclor-1221	ND	30
Aroclor-1232	ND	15
Aroclor-1242	ND	15
Aroclor-1248	ND	15
Aroclor-1254	ND	15
Aroclor-1260	ND	15

Surrogate	%REC	Limits
TCMX	111	46-141
Decachlorobiphenyl	99	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-01-02.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-017	Analyzed:	11/06/15
Moisture:	31%		

Analyte	Result	RL
Aroclor-1016	ND	14
Aroclor-1221	ND	28
Aroclor-1232	ND	14
Aroclor-1242	ND	14
Aroclor-1248	ND	14
Aroclor-1254	ND	14
Aroclor-1260	ND	14

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	95	25-135

Field ID:	IE-01-04.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-018	Analyzed:	11/06/15
Moisture:	24%		

Analyte	Result	RL
Aroclor-1016	ND	13
Aroclor-1221	ND	25
Aroclor-1232	ND	13
Aroclor-1242	ND	13
Aroclor-1248	ND	13
Aroclor-1254	ND	13
Aroclor-1260	ND	13

Surrogate	%REC	Limits
TCMX	112	46-141
Decachlorobiphenyl	93	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-10-02.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-019	Analyzed:	11/06/15
Moisture:	38%		

Analyte	Result	RL
Aroclor-1016	ND	15
Aroclor-1221	ND	31
Aroclor-1232	ND	15
Aroclor-1242	ND	15
Aroclor-1248	ND	15
Aroclor-1254	ND	15
Aroclor-1260	ND	15

Surrogate	%REC	Limits
TCMX	103	46-141
Decachlorobiphenyl	95	25-135

Field ID:	IE-09-01.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-020	Analyzed:	11/06/15
Moisture:	42%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	33
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	100	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-09-04.5	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-021	Analyzed:	11/06/15
Moisture:	49%		

Analyte	Result	RL
Aroclor-1016	ND	19
Aroclor-1221	ND	38
Aroclor-1232	ND	19
Aroclor-1242	ND	19
Aroclor-1248	ND	19
Aroclor-1254	ND	19
Aroclor-1260	ND	19

Surrogate	%REC	Limits
TCMX	110	46-141
Decachlorobiphenyl	95	25-135

Field ID:	IE-12-15.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-022	Analyzed:	11/06/15
Moisture:	49%		

Analyte	Result	RL
Aroclor-1016	ND	19
Aroclor-1221	ND	37
Aroclor-1232	ND	19
Aroclor-1242	ND	19
Aroclor-1248	ND	19
Aroclor-1254	ND	19
Aroclor-1260	ND	19

Surrogate	%REC	Limits
TCMX	108	46-141
Decachlorobiphenyl	94	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-12-25.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-023	Analyzed:	11/06/15
Moisture:	42%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	33
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	112	46-141
Decachlorobiphenyl	95	25-135

Field ID:	IE-11-15.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-024	Analyzed:	11/06/15
Moisture:	46%		

Analyte	Result	RL
Aroclor-1016	ND	18
Aroclor-1221	ND	36
Aroclor-1232	ND	18
Aroclor-1242	ND	18
Aroclor-1248	ND	18
Aroclor-1254	ND	18
Aroclor-1260	ND	18

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	100	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-11-25.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-025	Analyzed:	11/06/15
Moisture:	42%		

Analyte	Result	RL
Aroclor-1016	ND	17
Aroclor-1221	ND	33
Aroclor-1232	ND	17
Aroclor-1242	ND	17
Aroclor-1248	ND	17
Aroclor-1254	ND	17
Aroclor-1260	ND	17

Surrogate	%REC	Limits
TCMX	109	46-141
Decachlorobiphenyl	102	25-135

Field ID:	IE-13-15.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-026	Analyzed:	11/06/15
Moisture:	47%		

Analyte	Result	RL
Aroclor-1016	ND	18
Aroclor-1221	ND	36
Aroclor-1232	ND	18
Aroclor-1242	ND	18
Aroclor-1248	ND	18
Aroclor-1254	ND	18
Aroclor-1260	ND	18

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	95	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Diln Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-13-30.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-027	Analyzed:	11/06/15
Moisture:	46%		

Analyte	Result	RL
Aroclor-1016	ND	18
Aroclor-1221	ND	36
Aroclor-1232	ND	18
Aroclor-1242	ND	18
Aroclor-1248	ND	18
Aroclor-1254	ND	18
Aroclor-1260	ND	18

Surrogate	%REC	Limits
TCMX	100	46-141
Decachlorobiphenyl	94	25-135

Field ID:	IE-13-45.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-028	Analyzed:	11/06/15
Moisture:	21%		

Analyte	Result	RL
Aroclor-1016	ND	12
Aroclor-1221	ND	24
Aroclor-1232	ND	12
Aroclor-1242	ND	12
Aroclor-1248	ND	12
Aroclor-1254	ND	12
Aroclor-1260	ND	12

Surrogate	%REC	Limits
TCMX	81	46-141
Decachlorobiphenyl	76	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Matrix:	Soil	Dil'n Fac:	1.000
Units:	ug/Kg	Sampled:	11/03/15
Basis:	dry	Received:	11/03/15

Field ID:	IE-13-60.0	Batch#:	229123
Type:	SAMPLE	Prepared:	11/05/15
Lab ID:	271270-029	Analyzed:	11/06/15
Moisture:	25%		

Analyte	Result	RL
Aroclor-1016	ND	13
Aroclor-1221	ND	26
Aroclor-1232	ND	13
Aroclor-1242	ND	13
Aroclor-1248	ND	13
Aroclor-1254	ND	13
Aroclor-1260	ND	13

Surrogate	%REC	Limits
TCMX	75	46-141
Decachlorobiphenyl	89	25-135

Type:	BLANK	Prepared:	11/04/15
Lab ID:	QC811218	Analyzed:	11/05/15
Batch#:	229055		

Analyte	Result	RL
Aroclor-1016	ND	4.8
Aroclor-1221	ND	9.6
Aroclor-1232	ND	4.8
Aroclor-1242	ND	4.8
Aroclor-1248	ND	4.8
Aroclor-1254	ND	4.8
Aroclor-1260	ND	4.8

Surrogate	%REC	Limits
TCMX	107	46-141
Decachlorobiphenyl	91	25-135

Type:	BLANK	Prepared:	11/05/15
Lab ID:	QC811489	Analyzed:	11/06/15
Batch#:	229123		

Analyte	Result	RL
Aroclor-1016	ND	9.6
Aroclor-1221	ND	19
Aroclor-1232	ND	9.6
Aroclor-1242	ND	9.6
Aroclor-1248	ND	9.6
Aroclor-1254	ND	9.6
Aroclor-1260	ND	9.6

Surrogate	%REC	Limits
TCMX	114	46-141
Decachlorobiphenyl	102	25-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811219	Batch#:	229055
Matrix:	Soil	Prepared:	11/04/15
Units:	ug/Kg	Analyzed:	11/05/15

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	166.2	164.1	99	64-140
Aroclor-1260	166.2	199.4	120	65-146

Surrogate	%REC	Limits
TCMX	116	46-141
Decachlorobiphenyl	107	25-135

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Field ID:	ZZZZZZZZZZ	Batch#:	229055
MSS Lab ID:	271240-017	Sampled:	11/02/15
Matrix:	Soil	Received:	11/02/15
Units:	ug/Kg	Prepared:	11/04/15
Basis:	dry	Analyzed:	11/05/15
Diln Fac:	1.000		

Type: MS Moisture: 17%
Lab ID: QC811220

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.436	201.0	167.9	84	60-161
Aroclor-1260	12.31	201.0	202.1	94	42-166

Surrogate	%REC	Limits
TCMX	97	46-141
Decachlorobiphenyl	79	25-135

Type: MSD Moisture: 17%
Lab ID: QC811221

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	201.8	187.0	93	60-161	10	43
Aroclor-1260	201.8	211.6	99	42-166	4	51

Surrogate	%REC	Limits
TCMX	111	46-141
Decachlorobiphenyl	79	25-135

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC811490	Batch#:	229123
Matrix:	Soil	Prepared:	11/05/15
Units:	ug/Kg	Analyzed:	11/06/15

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	166.1	182.8	110	64-140
Aroclor-1260	166.1	193.4	116	65-146

Surrogate	%REC	Limits
TCMX	115	46-141
Decachlorobiphenyl	100	25-135

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3550B
Project#:	15-1313A	Analysis:	EPA 8082
Field ID:	IE-01-04.0	Batch#:	229123
MSS Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	ug/Kg	Prepared:	11/05/15
Basis:	dry	Analyzed:	11/06/15
Diln Fac:	1.000		

Type: MS Moisture: 24%
Lab ID: QC811491

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<3.101	217.6	237.5	109	60-161
Aroclor-1260	<2.028	217.6	247.6	114	42-166

Surrogate	%REC	Limits
TCMX	108	46-141
Decachlorobiphenyl	87	25-135

Type: MSD Moisture: 24%
Lab ID: QC811492

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	218.4	241.8	111	60-161	1	43
Aroclor-1260	218.4	247.8	113	42-166	0	51

Surrogate	%REC	Limits
TCMX	106	46-141
Decachlorobiphenyl	88	25-135

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-10-04.0	Diln Fac:	1.000
Lab ID:	271270-001	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 34%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.7	0.79	229255	EPA 3050B	EPA 6010B
Arsenic	4.9	0.39	229255	EPA 3050B	EPA 6010B
Barium	40	0.39	229255	EPA 3050B	EPA 6010B
Beryllium	0.41	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.0	0.39	229255	EPA 3050B	EPA 6010B
Chromium	92	0.39	229255	EPA 3050B	EPA 6010B
Cobalt	7.5	0.39	229255	EPA 3050B	EPA 6010B
Copper	21	0.39	229255	EPA 3050B	EPA 6010B
Lead	4.0	0.39	229255	EPA 3050B	EPA 6010B
Mercury	0.041	0.024	229250	METHOD	EPA 7471A
Molybdenum	1.7	0.39	229255	EPA 3050B	EPA 6010B
Nickel	55	0.39	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.79	229255	EPA 3050B	EPA 6010B
Silver	ND	0.39	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.79	229255	EPA 3050B	EPA 6010B
Vanadium	68	0.39	229255	EPA 3050B	EPA 6010B
Zinc	65	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-04-02.0	Diln Fac:	1.000
Lab ID:	271270-002	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 44%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.1	0.84	229255	EPA 3050B	EPA 6010B
Arsenic	3.2	0.42	229255	EPA 3050B	EPA 6010B
Barium	61	0.42	229255	EPA 3050B	EPA 6010B
Beryllium	0.51	0.17	229255	EPA 3050B	EPA 6010B
Cadmium	1.0	0.42	229255	EPA 3050B	EPA 6010B
Chromium	110	0.42	229255	EPA 3050B	EPA 6010B
Cobalt	9.8	0.42	229255	EPA 3050B	EPA 6010B
Copper	26	0.42	229255	EPA 3050B	EPA 6010B
Lead	15	0.42	229255	EPA 3050B	EPA 6010B
Mercury	0.093	0.032	229250	METHOD	EPA 7471A
Molybdenum	2.5	0.42	229255	EPA 3050B	EPA 6010B
Nickel	68	0.42	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.84	229255	EPA 3050B	EPA 6010B
Silver	ND	0.42	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.84	229255	EPA 3050B	EPA 6010B
Vanadium	77	0.42	229255	EPA 3050B	EPA 6010B
Zinc	90	1.7	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-04-04.0	Diln Fac:	1.000
Lab ID:	271270-003	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 41%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.7	0.79	229255	EPA 3050B	EPA 6010B
Arsenic	6.8	0.40	229255	EPA 3050B	EPA 6010B
Barium	110	0.40	229255	EPA 3050B	EPA 6010B
Beryllium	0.64	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.6	0.40	229255	EPA 3050B	EPA 6010B
Chromium	360	0.40	229255	EPA 3050B	EPA 6010B
Cobalt	13	0.40	229255	EPA 3050B	EPA 6010B
Copper	59	0.40	229255	EPA 3050B	EPA 6010B
Lead	38	0.40	229255	EPA 3050B	EPA 6010B
Mercury	0.075	0.030	229250	METHOD	EPA 7471A
Molybdenum	9.0	0.40	229255	EPA 3050B	EPA 6010B
Nickel	84	0.40	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.79	229255	EPA 3050B	EPA 6010B
Silver	ND	0.40	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.79	229255	EPA 3050B	EPA 6010B
Vanadium	80	0.40	229255	EPA 3050B	EPA 6010B
Zinc	240	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-07-02.0	Diln Fac:	1.000
Lab ID:	271270-004	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 43%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.8	0.80	229255	EPA 3050B	EPA 6010B
Arsenic	8.0	0.40	229255	EPA 3050B	EPA 6010B
Barium	53	0.40	229255	EPA 3050B	EPA 6010B
Beryllium	0.50	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.3	0.40	229255	EPA 3050B	EPA 6010B
Chromium	110	0.40	229255	EPA 3050B	EPA 6010B
Cobalt	9.7	0.40	229255	EPA 3050B	EPA 6010B
Copper	26	0.40	229255	EPA 3050B	EPA 6010B
Lead	9.3	0.40	229255	EPA 3050B	EPA 6010B
Mercury	0.032	0.028	229250	METHOD	EPA 7471A
Molybdenum	2.4	0.40	229255	EPA 3050B	EPA 6010B
Nickel	64	0.40	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.80	229255	EPA 3050B	EPA 6010B
Silver	ND	0.40	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.80	229255	EPA 3050B	EPA 6010B
Vanadium	83	0.40	229255	EPA 3050B	EPA 6010B
Zinc	80	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-07-04.0	Diln Fac:	1.000
Lab ID:	271270-005	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 42%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.1	0.96	229255	EPA 3050B	EPA 6010B
Arsenic	6.8	0.48	229255	EPA 3050B	EPA 6010B
Barium	83	0.48	229255	EPA 3050B	EPA 6010B
Beryllium	0.57	0.19	229255	EPA 3050B	EPA 6010B
Cadmium	1.2	0.48	229255	EPA 3050B	EPA 6010B
Chromium	110	0.48	229255	EPA 3050B	EPA 6010B
Cobalt	12	0.48	229255	EPA 3050B	EPA 6010B
Copper	40	0.48	229255	EPA 3050B	EPA 6010B
Lead	25	0.48	229255	EPA 3050B	EPA 6010B
Mercury	0.038	0.028	229250	METHOD	EPA 7471A
Molybdenum	3.5	0.48	229255	EPA 3050B	EPA 6010B
Nickel	72	0.48	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.96	229255	EPA 3050B	EPA 6010B
Silver	ND	0.48	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.96	229255	EPA 3050B	EPA 6010B
Vanadium	73	0.48	229255	EPA 3050B	EPA 6010B
Zinc	180	1.9	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-06-02.0	Diln Fac:	1.000
Lab ID:	271270-006	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 32%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.3	0.71	229255	EPA 3050B	EPA 6010B
Arsenic	11	0.36	229255	EPA 3050B	EPA 6010B
Barium	44	0.36	229255	EPA 3050B	EPA 6010B
Beryllium	0.42	0.14	229255	EPA 3050B	EPA 6010B
Cadmium	1.1	0.36	229255	EPA 3050B	EPA 6010B
Chromium	100	0.36	229255	EPA 3050B	EPA 6010B
Cobalt	10	0.36	229255	EPA 3050B	EPA 6010B
Copper	29	0.36	229255	EPA 3050B	EPA 6010B
Lead	5.3	0.36	229255	EPA 3050B	EPA 6010B
Mercury	0.12	0.025	229250	METHOD	EPA 7471A
Molybdenum	2.3	0.36	229255	EPA 3050B	EPA 6010B
Nickel	68	0.36	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.71	229255	EPA 3050B	EPA 6010B
Silver	ND	0.36	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.71	229255	EPA 3050B	EPA 6010B
Vanadium	80	0.36	229255	EPA 3050B	EPA 6010B
Zinc	93	1.4	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-06-04.0	Diln Fac:	1.000
Lab ID:	271270-007	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 39%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.0	0.82	229255	EPA 3050B	EPA 6010B
Arsenic	6.9	0.41	229255	EPA 3050B	EPA 6010B
Barium	51	0.41	229255	EPA 3050B	EPA 6010B
Beryllium	0.65	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.2	0.41	229255	EPA 3050B	EPA 6010B
Chromium	99	0.41	229255	EPA 3050B	EPA 6010B
Cobalt	14	0.41	229255	EPA 3050B	EPA 6010B
Copper	35	0.41	229255	EPA 3050B	EPA 6010B
Lead	8.1	0.41	229255	EPA 3050B	EPA 6010B
Mercury	0.037	0.027	229250	METHOD	EPA 7471A
Molybdenum	1.7	0.41	229255	EPA 3050B	EPA 6010B
Nickel	73	0.41	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.82	229255	EPA 3050B	EPA 6010B
Silver	ND	0.41	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.82	229255	EPA 3050B	EPA 6010B
Vanadium	73	0.41	229255	EPA 3050B	EPA 6010B
Zinc	97	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-05-02.0	Diln Fac:	1.000
Lab ID:	271270-008	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 41%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.2	0.77	229255	EPA 3050B	EPA 6010B
Arsenic	6.6	0.39	229255	EPA 3050B	EPA 6010B
Barium	58	0.39	229255	EPA 3050B	EPA 6010B
Beryllium	0.50	0.15	229255	EPA 3050B	EPA 6010B
Cadmium	1.2	0.39	229255	EPA 3050B	EPA 6010B
Chromium	110	0.39	229255	EPA 3050B	EPA 6010B
Cobalt	9.7	0.39	229255	EPA 3050B	EPA 6010B
Copper	29	0.39	229255	EPA 3050B	EPA 6010B
Lead	12	0.39	229255	EPA 3050B	EPA 6010B
Mercury	0.051	0.029	229250	METHOD	EPA 7471A
Molybdenum	3.0	0.39	229255	EPA 3050B	EPA 6010B
Nickel	65	0.39	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.77	229255	EPA 3050B	EPA 6010B
Silver	ND	0.39	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.77	229255	EPA 3050B	EPA 6010B
Vanadium	89	0.39	229255	EPA 3050B	EPA 6010B
Zinc	86	1.5	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-05-04.0	Diln Fac:	1.000
Lab ID:	271270-009	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 39%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.7	0.75	229255	EPA 3050B	EPA 6010B
Arsenic	6.4	0.37	229255	EPA 3050B	EPA 6010B
Barium	51	0.37	229255	EPA 3050B	EPA 6010B
Beryllium	0.48	0.15	229255	EPA 3050B	EPA 6010B
Cadmium	1.2	0.37	229255	EPA 3050B	EPA 6010B
Chromium	100	0.37	229255	EPA 3050B	EPA 6010B
Cobalt	8.9	0.37	229255	EPA 3050B	EPA 6010B
Copper	27	0.37	229255	EPA 3050B	EPA 6010B
Lead	9.0	0.37	229255	EPA 3050B	EPA 6010B
Mercury	0.043	0.029	229250	METHOD	EPA 7471A
Molybdenum	2.0	0.37	229255	EPA 3050B	EPA 6010B
Nickel	60	0.37	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.75	229255	EPA 3050B	EPA 6010B
Silver	ND	0.37	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.75	229255	EPA 3050B	EPA 6010B
Vanadium	84	0.37	229255	EPA 3050B	EPA 6010B
Zinc	77	1.5	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-13-75.0	Diln Fac:	1.000
Lab ID:	271270-010	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 18%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	1.4	0.66	229255	EPA 3050B	EPA 6010B
Arsenic	4.2	0.33	229255	EPA 3050B	EPA 6010B
Barium	110	0.33	229255	EPA 3050B	EPA 6010B
Beryllium	0.34	0.13	229255	EPA 3050B	EPA 6010B
Cadmium	0.65	0.33	229255	EPA 3050B	EPA 6010B
Chromium	58	0.33	229255	EPA 3050B	EPA 6010B
Cobalt	12	0.33	229255	EPA 3050B	EPA 6010B
Copper	19	0.33	229255	EPA 3050B	EPA 6010B
Lead	5.2	0.33	229255	EPA 3050B	EPA 6010B
Mercury	0.042	0.018	229250	METHOD	EPA 7471A
Molybdenum	0.52	0.33	229255	EPA 3050B	EPA 6010B
Nickel	74	0.33	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.66	229255	EPA 3050B	EPA 6010B
Silver	ND	0.33	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.66	229255	EPA 3050B	EPA 6010B
Vanadium	38	0.33	229255	EPA 3050B	EPA 6010B
Zinc	44	1.3	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-03-02.0	Diln Fac:	1.000
Lab ID:	271270-011	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 39%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.2	0.84	229255	EPA 3050B	EPA 6010B
Arsenic	12	0.42	229255	EPA 3050B	EPA 6010B
Barium	73	0.42	229255	EPA 3050B	EPA 6010B
Beryllium	0.64	0.17	229255	EPA 3050B	EPA 6010B
Cadmium	0.90	0.42	229255	EPA 3050B	EPA 6010B
Chromium	89	0.42	229255	EPA 3050B	EPA 6010B
Cobalt	6.9	0.42	229255	EPA 3050B	EPA 6010B
Copper	43	0.42	229255	EPA 3050B	EPA 6010B
Lead	21	0.42	229255	EPA 3050B	EPA 6010B
Mercury	0.10	0.028	229250	METHOD	EPA 7471A
Molybdenum	14	0.42	229255	EPA 3050B	EPA 6010B
Nickel	51	0.42	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.84	229255	EPA 3050B	EPA 6010B
Silver	ND	0.42	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.84	229255	EPA 3050B	EPA 6010B
Vanadium	84	0.42	229255	EPA 3050B	EPA 6010B
Zinc	77	1.7	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-03-04.0	Diln Fac:	1.000
Lab ID:	271270-012	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 45%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	1.9	0.90	229255	EPA 3050B	EPA 6010B
Arsenic	4.2	0.45	229255	EPA 3050B	EPA 6010B
Barium	41	0.45	229255	EPA 3050B	EPA 6010B
Beryllium	0.52	0.18	229255	EPA 3050B	EPA 6010B
Cadmium	0.91	0.45	229255	EPA 3050B	EPA 6010B
Chromium	89	0.45	229255	EPA 3050B	EPA 6010B
Cobalt	9.4	0.45	229255	EPA 3050B	EPA 6010B
Copper	29	0.45	229255	EPA 3050B	EPA 6010B
Lead	3.0	0.45	229255	EPA 3050B	EPA 6010B
Mercury	0.047	0.028	229250	METHOD	EPA 7471A
Molybdenum	0.99	0.45	229255	EPA 3050B	EPA 6010B
Nickel	63	0.45	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.90	229255	EPA 3050B	EPA 6010B
Silver	ND	0.45	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.90	229255	EPA 3050B	EPA 6010B
Vanadium	70	0.45	229255	EPA 3050B	EPA 6010B
Zinc	64	1.8	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-08-02.0	Diln Fac:	1.000
Lab ID:	271270-013	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 45%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.2	0.86	229255	EPA 3050B	EPA 6010B
Arsenic	3.5	0.43	229255	EPA 3050B	EPA 6010B
Barium	44	0.43	229255	EPA 3050B	EPA 6010B
Beryllium	0.52	0.17	229255	EPA 3050B	EPA 6010B
Cadmium	1.1	0.43	229255	EPA 3050B	EPA 6010B
Chromium	99	0.43	229255	EPA 3050B	EPA 6010B
Cobalt	8.4	0.43	229255	EPA 3050B	EPA 6010B
Copper	21	0.43	229255	EPA 3050B	EPA 6010B
Lead	4.5	0.43	229255	EPA 3050B	EPA 6010B
Mercury	0.049	0.031	229250	METHOD	EPA 7471A
Molybdenum	1.2	0.43	229255	EPA 3050B	EPA 6010B
Nickel	63	0.43	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.86	229255	EPA 3050B	EPA 6010B
Silver	ND	0.43	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.86	229255	EPA 3050B	EPA 6010B
Vanadium	77	0.43	229255	EPA 3050B	EPA 6010B
Zinc	76	1.7	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-08-04.0	Diln Fac:	1.000
Lab ID:	271270-014	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 46%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	1.6	1.0	229255	EPA 3050B	EPA 6010B
Arsenic	4.4	0.50	229255	EPA 3050B	EPA 6010B
Barium	50	0.50	229255	EPA 3050B	EPA 6010B
Beryllium	0.57	0.20	229255	EPA 3050B	EPA 6010B
Cadmium	1.2	0.50	229255	EPA 3050B	EPA 6010B
Chromium	97	0.50	229255	EPA 3050B	EPA 6010B
Cobalt	9.2	0.50	229255	EPA 3050B	EPA 6010B
Copper	20	0.50	229255	EPA 3050B	EPA 6010B
Lead	3.7	0.50	229255	EPA 3050B	EPA 6010B
Mercury	0.047	0.034	229250	METHOD	EPA 7471A
Molybdenum	1.0	0.50	229255	EPA 3050B	EPA 6010B
Nickel	65	0.50	229255	EPA 3050B	EPA 6010B
Selenium	ND	1.0	229255	EPA 3050B	EPA 6010B
Silver	ND	0.50	229255	EPA 3050B	EPA 6010B
Thallium	ND	1.0	229255	EPA 3050B	EPA 6010B
Vanadium	80	0.50	229255	EPA 3050B	EPA 6010B
Zinc	75	2.0	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-02-02.0	Diln Fac:	1.000
Lab ID:	271270-015	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 33%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.2	0.79	229255	EPA 3050B	EPA 6010B
Arsenic	7.6	0.39	229255	EPA 3050B	EPA 6010B
Barium	48	0.39	229255	EPA 3050B	EPA 6010B
Beryllium	0.61	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.1	0.39	229255	EPA 3050B	EPA 6010B
Chromium	94	0.39	229255	EPA 3050B	EPA 6010B
Cobalt	8.6	0.39	229255	EPA 3050B	EPA 6010B
Copper	27	0.39	229255	EPA 3050B	EPA 6010B
Lead	6.1	0.39	229255	EPA 3050B	EPA 6010B
Mercury	0.069	0.026	229250	METHOD	EPA 7471A
Molybdenum	1.8	0.39	229255	EPA 3050B	EPA 6010B
Nickel	59	0.39	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.79	229255	EPA 3050B	EPA 6010B
Silver	ND	0.39	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.79	229255	EPA 3050B	EPA 6010B
Vanadium	73	0.39	229255	EPA 3050B	EPA 6010B
Zinc	73	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-02-04.0	Diln Fac:	1.000
Lab ID:	271270-016	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 36%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.1	0.84	229255	EPA 3050B	EPA 6010B
Arsenic	7.0	0.42	229255	EPA 3050B	EPA 6010B
Barium	83	0.42	229255	EPA 3050B	EPA 6010B
Beryllium	0.71	0.17	229255	EPA 3050B	EPA 6010B
Cadmium	1.3	0.42	229255	EPA 3050B	EPA 6010B
Chromium	110	0.42	229255	EPA 3050B	EPA 6010B
Cobalt	11	0.42	229255	EPA 3050B	EPA 6010B
Copper	35	0.42	229255	EPA 3050B	EPA 6010B
Lead	19	0.42	229255	EPA 3050B	EPA 6010B
Mercury	0.13	0.024	229250	METHOD	EPA 7471A
Molybdenum	2.8	0.42	229255	EPA 3050B	EPA 6010B
Nickel	71	0.42	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.84	229255	EPA 3050B	EPA 6010B
Silver	ND	0.42	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.84	229255	EPA 3050B	EPA 6010B
Vanadium	84	0.42	229255	EPA 3050B	EPA 6010B
Zinc	110	1.7	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-01-02.0	Diln Fac:	1.000
Lab ID:	271270-017	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 31%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	3.0	0.72	229255	EPA 3050B	EPA 6010B
Arsenic	6.7	0.36	229255	EPA 3050B	EPA 6010B
Barium	45	0.36	229255	EPA 3050B	EPA 6010B
Beryllium	0.46	0.14	229255	EPA 3050B	EPA 6010B
Cadmium	1.0	0.36	229255	EPA 3050B	EPA 6010B
Chromium	100	0.36	229255	EPA 3050B	EPA 6010B
Cobalt	8.6	0.36	229255	EPA 3050B	EPA 6010B
Copper	27	0.36	229255	EPA 3050B	EPA 6010B
Lead	4.9	0.36	229255	EPA 3050B	EPA 6010B
Mercury	0.16	0.023	229250	METHOD	EPA 7471A
Molybdenum	2.8	0.36	229255	EPA 3050B	EPA 6010B
Nickel	64	0.36	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.72	229255	EPA 3050B	EPA 6010B
Silver	ND	0.36	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.72	229255	EPA 3050B	EPA 6010B
Vanadium	94	0.36	229255	EPA 3050B	EPA 6010B
Zinc	69	1.4	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-01-04.0	Diln Fac:	1.000
Lab ID:	271270-018	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 24%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.1	0.66	229255	EPA 3050B	EPA 6010B
Arsenic	4.5	0.33	229255	EPA 3050B	EPA 6010B
Barium	34	0.33	229255	EPA 3050B	EPA 6010B
Beryllium	0.50	0.13	229255	EPA 3050B	EPA 6010B
Cadmium	0.99	0.33	229255	EPA 3050B	EPA 6010B
Chromium	69	0.33	229255	EPA 3050B	EPA 6010B
Cobalt	12	0.33	229255	EPA 3050B	EPA 6010B
Copper	23	0.33	229255	EPA 3050B	EPA 6010B
Lead	5.8	0.33	229255	EPA 3050B	EPA 6010B
Mercury	0.16	0.023	229250	METHOD	EPA 7471A
Molybdenum	0.77	0.33	229255	EPA 3050B	EPA 6010B
Nickel	61	0.33	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.66	229255	EPA 3050B	EPA 6010B
Silver	ND	0.33	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.66	229255	EPA 3050B	EPA 6010B
Vanadium	53	0.33	229255	EPA 3050B	EPA 6010B
Zinc	52	1.3	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-10-02.0	Diln Fac:	1.000
Lab ID:	271270-019	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Moisture: 38%

Analyte	Result	RL	Batch#	Prep	Analysis
Antimony	2.4	0.79	229255	EPA 3050B	EPA 6010B
Arsenic	5.3	0.40	229255	EPA 3050B	EPA 6010B
Barium	51	0.40	229255	EPA 3050B	EPA 6010B
Beryllium	0.48	0.16	229255	EPA 3050B	EPA 6010B
Cadmium	1.1	0.40	229255	EPA 3050B	EPA 6010B
Chromium	110	0.40	229255	EPA 3050B	EPA 6010B
Cobalt	8.7	0.40	229255	EPA 3050B	EPA 6010B
Copper	32	0.40	229255	EPA 3050B	EPA 6010B
Lead	8.5	0.40	229255	EPA 3050B	EPA 6010B
Mercury	0.035	0.027	229250	METHOD	EPA 7471A
Molybdenum	2.5	0.40	229255	EPA 3050B	EPA 6010B
Nickel	60	0.40	229255	EPA 3050B	EPA 6010B
Selenium	ND	0.79	229255	EPA 3050B	EPA 6010B
Silver	ND	0.40	229255	EPA 3050B	EPA 6010B
Thallium	ND	0.79	229255	EPA 3050B	EPA 6010B
Vanadium	81	0.40	229255	EPA 3050B	EPA 6010B
Zinc	75	1.6	229255	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-09-01.0	Diln Fac:	1.000
Lab ID:	271270-020	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 42%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	1.5	0.87	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	7.1	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	26	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.39	0.17	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.3	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	84	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	8.5	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	44	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	2.7	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.050	0.029	229250	11/09/15	METHOD	EPA 7471A
Molybdenum	7.8	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	51	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.87	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.87	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	49	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	110	1.7	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-09-04.5	Diln Fac:	1.000
Lab ID:	271270-021	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 49%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	3.0	0.92	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	3.5	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	39	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.61	0.18	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.4	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	83	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	15	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	24	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.5	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.053	0.030	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	ND	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	86	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.92	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.92	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	62	0.46	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	85	1.8	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-12-15.0	Diln Fac:	1.000
Lab ID:	271270-022	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 49%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	3.1	0.91	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	7.2	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	43	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.58	0.18	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.3	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	81	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	17	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	31	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	8.3	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.066	0.031	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.70	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	87	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.91	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.91	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	62	0.45	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	84	1.8	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-12-25.0	Diln Fac:	1.000
Lab ID:	271270-023	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 42%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	2.6	0.79	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	7.0	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	44	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.52	0.16	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.2	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	75	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	15	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	31	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.5	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.065	0.027	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.63	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	80	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.79	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.79	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	58	0.40	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	75	1.6	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-11-15.0	Diln Fac:	1.000
Lab ID:	271270-024	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 46%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	1.5	0.84	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	6.8	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	40	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.54	0.17	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.2	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	77	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	16	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	30	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.5	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.054	0.029	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.67	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	81	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.84	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.84	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	59	0.42	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	77	1.7	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-11-25.0	Diln Fac:	1.000
Lab ID:	271270-025	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 42%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	2.6	0.78	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	8.6	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	38	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.48	0.16	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.2	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	68	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	15	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	28	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.7	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.051	0.027	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.74	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	74	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.78	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.78	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	55	0.39	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	70	1.6	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-13-15.0	Diln Fac:	1.000
Lab ID:	271270-026	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 47%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	3.1	0.86	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	6.9	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	38	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.54	0.17	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.2	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	77	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	15	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	28	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.1	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.048	0.029	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.49	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	79	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.86	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.86	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	59	0.43	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	77	1.7	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-13-30.0	Diln Fac:	1.000
Lab ID:	271270-027	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 46%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	2.7	0.88	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	5.2	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	41	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.56	0.18	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	1.2	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	80	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	16	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	30	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	7.4	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.056	0.028	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	ND	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	83	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.88	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.88	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	63	0.44	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	82	1.8	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-13-45.0	Diln Fac:	1.000
Lab ID:	271270-028	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 21%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	2.2	0.58	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	3.5	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	150	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.69	0.12	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	0.92	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	83	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	20	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	41	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	9.7	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.10	0.019	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.84	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	130	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.58	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.58	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	54	0.29	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	92	1.2	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	271270	Project#:	15-1313A
Client:	Iris Environmental	Location:	SVCW WTP
Field ID:	IE-13-60.0	Diln Fac:	1.000
Lab ID:	271270-029	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Analyzed:	11/10/15
Basis:	dry		

Moisture: 25%

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	2.4	0.69	229204	11/08/15	EPA 3050B	EPA 6010B
Arsenic	6.9	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Barium	110	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Beryllium	0.51	0.14	229204	11/08/15	EPA 3050B	EPA 6010B
Cadmium	0.96	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Chromium	73	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Cobalt	16	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Copper	36	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Lead	8.3	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Mercury	0.085	0.021	229220	11/09/15	METHOD	EPA 7471A
Molybdenum	0.65	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Nickel	100	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Selenium	ND	0.69	229204	11/08/15	EPA 3050B	EPA 6010B
Silver	ND	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Thallium	ND	0.69	229204	11/08/15	EPA 3050B	EPA 6010B
Vanadium	46	0.34	229204	11/08/15	EPA 3050B	EPA 6010B
Zinc	75	1.4	229204	11/08/15	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3050B
Project#:	15-1313A	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC811809	Batch#:	229204
Matrix:	Soil	Prepared:	11/07/15
Units:	mg/Kg	Analyzed:	11/10/15

Analyte	Result	RL
Antimony	ND	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	ND	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3050B
Project#:	15-1313A	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	229204
Units:	mg/Kg	Prepared:	11/07/15
Diln Fac:	5.000	Analyzed:	11/10/15

Type: BS Lab ID: QC811810

Analyte	Spiked	Result	%REC	Limits
Antimony	50.00	54.92	110	80-120
Arsenic	50.00	55.94	112	80-120
Barium	50.00	52.81	106	80-120
Beryllium	50.00	52.60	105	80-120
Cadmium	50.00	55.23	110	80-120
Chromium	50.00	53.53	107	80-120
Cobalt	50.00	51.98	104	80-120
Copper	50.00	53.36	107	80-120
Lead	50.00	52.77	106	80-120
Molybdenum	50.00	49.52	99	80-120
Nickel	50.00	51.83	104	80-120
Selenium	50.00	53.40	107	80-120
Silver	50.00	53.60	107	80-120
Thallium	50.00	51.24	102	80-120
Vanadium	50.00	54.42	109	80-120
Zinc	50.00	53.45	107	80-120

Type: BSD Lab ID: QC811811

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	50.00	53.61	107	80-120	2	20
Arsenic	50.00	55.27	111	80-120	1	20
Barium	50.00	52.18	104	80-120	1	20
Beryllium	50.00	52.12	104	80-120	1	20
Cadmium	50.00	54.82	110	80-120	1	20
Chromium	50.00	53.14	106	80-120	1	20
Cobalt	50.00	51.41	103	80-120	1	20
Copper	50.00	52.80	106	80-120	1	20
Lead	50.00	52.17	104	80-120	1	20
Molybdenum	50.00	49.01	98	80-120	1	20
Nickel	50.00	51.25	103	80-120	1	20
Selenium	50.00	52.95	106	80-120	1	20
Silver	50.00	53.51	107	80-120	0	20
Thallium	50.00	50.59	101	80-120	1	20
Vanadium	50.00	54.09	108	80-120	1	20
Zinc	50.00	52.80	106	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	229220
Lab ID:	QC811889	Prepared:	11/09/15
Matrix:	Soil	Analyzed:	11/10/15
Units:	mg/Kg		

Result	RL
ND	0.017

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	229220
Matrix:	Soil	Prepared:	11/09/15
Units:	mg/Kg	Analyzed:	11/10/15
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC811890	0.2083	0.1949	94	80-120		
BSD	QC811891	0.2083	0.2082	100	80-120	7	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	229220
MSS Lab ID:	271358-001	Sampled:	11/06/15
Matrix:	Soil	Received:	11/06/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	as received	Analyzed:	11/09/15

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC811892	0.03337	0.2155	0.2731	111	69-142		
MSD	QC811893		0.2232	0.2762	109	69-142	2	36

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	229250
Lab ID:	QC812002	Prepared:	11/09/15
Matrix:	Soil	Analyzed:	11/10/15
Units:	mg/Kg		

Result	RL
ND	0.017

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	229250
Matrix:	Soil	Prepared:	11/09/15
Units:	mg/Kg	Analyzed:	11/10/15
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC812003	0.2083	0.2060	99	80-120		
BSD	QC812004	0.2083	0.2223	107	80-120	8	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	IE-09-01.0	Batch#:	229250
MSS Lab ID:	271270-020	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	mg/Kg	Prepared:	11/09/15
Basis:	dry	Analyzed:	11/10/15

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
MS	QC812005	0.05011	0.6952	0.7834	105	69-142	42%		
MSD	QC812006		0.6952	0.7723	104	69-142	42%	1	36

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3050B
Project#:	15-1313A	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC812030	Batch#:	229255
Matrix:	Soil	Prepared:	11/09/15
Units:	mg/Kg	Analyzed:	11/10/15

Analyte	Result	RL
Antimony	ND	0.50
Arsenic	ND	0.25
Barium	ND	0.25
Beryllium	ND	0.10
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	ND	0.25
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	0.50
Silver	ND	0.25
Thallium	ND	0.50
Vanadium	ND	0.25
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3050B
Project#:	15-1313A	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	229255
Units:	mg/Kg	Prepared:	11/09/15
Diln Fac:	10.00	Analyzed:	11/10/15

Type: BS Lab ID: QC812031

Analyte	Spiked	Result	%REC	Limits
Antimony	50.00	52.38	105	80-120
Arsenic	50.00	54.24	108	80-120
Barium	50.00	51.52	103	80-120
Beryllium	50.00	51.15	102	80-120
Cadmium	50.00	52.57	105	80-120
Chromium	50.00	51.89	104	80-120
Cobalt	50.00	50.29	101	80-120
Copper	50.00	51.29	103	80-120
Lead	50.00	50.93	102	80-120
Molybdenum	50.00	48.08	96	80-120
Nickel	50.00	50.25	101	80-120
Selenium	50.00	51.80	104	80-120
Silver	50.00	52.46	105	80-120
Thallium	50.00	49.61	99	80-120
Vanadium	50.00	53.23	106	80-120
Zinc	50.00	54.74	109	80-120

Type: BSD Lab ID: QC812032

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	50.00	53.09	106	80-120	1	20
Arsenic	50.00	56.98	114	80-120	5	20
Barium	50.00	53.62	107	80-120	4	20
Beryllium	50.00	52.77	106	80-120	3	20
Cadmium	50.00	54.80	110	80-120	4	20
Chromium	50.00	53.76	108	80-120	4	20
Cobalt	50.00	52.57	105	80-120	4	20
Copper	50.00	52.57	105	80-120	2	20
Lead	50.00	53.15	106	80-120	4	20
Molybdenum	50.00	50.12	100	80-120	4	20
Nickel	50.00	52.49	105	80-120	4	20
Selenium	50.00	53.88	108	80-120	4	20
Silver	50.00	53.51	107	80-120	2	20
Thallium	50.00	51.80	104	80-120	4	20
Vanadium	50.00	54.71	109	80-120	3	20
Zinc	50.00	54.42	109	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Moisture

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA CLP
Analyte:	Moisture, Percent	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	%	Analyzed:	11/05/15
Diln Fac:	1.000		

Field ID	Lab ID	Result	RL	Batch#
IE-10-04.0	271270-001	34	1	229085
IE-04-02.0	271270-002	44	1	229085
IE-04-04.0	271270-003	41	1	229085
IE-07-02.0	271270-004	43	1	229085
IE-07-04.0	271270-005	42	1	229085
IE-06-02.0	271270-006	32	1	229085
IE-06-04.0	271270-007	39	1	229085
IE-05-02.0	271270-008	41	1	229085
IE-05-04.0	271270-009	39	1	229085
IE-13-75.0	271270-010	18	1	229085
IE-03-02.0	271270-011	39	1	229085
IE-03-04.0	271270-012	45	1	229085
IE-08-02.0	271270-013	45	1	229085
IE-08-04.0	271270-014	46	1	229085
IE-02-02.0	271270-015	33	1	229085
IE-02-04.0	271270-016	36	1	229085
IE-01-02.0	271270-017	31	1	229085
IE-01-04.0	271270-018	24	1	229085
IE-10-02.0	271270-019	38	1	229085
IE-09-01.0	271270-020	42	1	229085
IE-09-04.5	271270-021	49	1	229086
IE-12-15.0	271270-022	49	1	229086
IE-12-25.0	271270-023	42	1	229086
IE-11-15.0	271270-024	46	1	229086
IE-11-25.0	271270-025	42	1	229086
IE-13-15.0	271270-026	47	1	229086
IE-13-30.0	271270-027	46	1	229086
IE-13-45.0	271270-028	21	1	229086
IE-13-60.0	271270-029	25	1	229086

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Moisture

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA CLP
Analyte:	Moisture, Percent	Diln Fac:	1.000
Type:	SDUP	Sampled:	11/03/15
Matrix:	Soil	Received:	11/03/15
Units:	%	Analyzed:	11/05/15

Field ID	MSS Lab ID	Lab ID	MSS Result	Result	RL	RPD	Lim	Batch#
IE-09-01.0	271270-020	QC811340	42.42	42.56	1.000	0	26	229085
IE-13-60.0	271270-029	QC811341	25.13	24.74	1.000	2	26	229086

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

pH

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 9045D
Analyte:	pH	Diln Fac:	1.000
Matrix:	Soil	Received:	11/03/15
Units:	SU		

Field ID	Lab ID	Result	RL	Batch#	Sampled	Prepared	Analyzed
IE-10-04.0	271270-001	6.2	1.0	229103	11/03/15 15:35	11/06/15 11:31	11/06/15 13:47
IE-04-02.0	271270-002	7.2	1.0	229103	11/03/15 14:25	11/06/15 11:31	11/06/15 13:47
IE-04-04.0	271270-003	7.1	1.0	229103	11/03/15 14:30	11/06/15 11:31	11/06/15 13:47
IE-07-02.0	271270-004	6.8	1.0	229103	11/03/15 14:35	11/06/15 11:31	11/06/15 13:47
IE-07-04.0	271270-005	7.2	1.0	229103	11/03/15 14:40	11/06/15 11:31	11/06/15 13:47
IE-06-02.0	271270-006	7.4	1.0	229103	11/03/15 14:50	11/06/15 11:31	11/06/15 13:47
IE-06-04.0	271270-007	6.7	1.0	229103	11/03/15 14:55	11/06/15 11:31	11/06/15 13:47
IE-05-02.0	271270-008	7.1	1.0	229103	11/03/15 16:40	11/06/15 11:31	11/06/15 13:47
IE-05-04.0	271270-009	6.6	1.0	229103	11/03/15 17:50	11/06/15 11:31	11/06/15 13:47
IE-13-75.0	271270-010	7.7	1.0	229196	11/03/15 13:40	11/08/15 11:05	11/09/15 11:13
IE-03-02.0	271270-011	6.5	1.0	229196	11/03/15 14:35	11/08/15 11:05	11/09/15 11:13
IE-03-04.0	271270-012	7.1	1.0	229196	11/03/15 14:55	11/08/15 11:05	11/09/15 11:13
IE-08-02.0	271270-013	6.5	1.0	229196	11/03/15 15:00	11/08/15 11:05	11/09/15 11:13
IE-08-04.0	271270-014	6.8	1.0	229196	11/03/15 15:10	11/08/15 11:05	11/09/15 11:13
IE-02-02.0	271270-015	7.3	1.0	229196	11/03/15 15:15	11/08/15 11:05	11/09/15 11:13
IE-02-04.0	271270-016	7.1	1.0	229196	11/03/15 15:25	11/08/15 11:05	11/09/15 11:13
IE-01-02.0	271270-017	6.1	1.0	229196	11/03/15 16:00	11/08/15 11:05	11/09/15 11:13
IE-01-04.0	271270-018	7.4	1.0	229196	11/03/15 16:05	11/08/15 11:05	11/09/15 11:13
IE-10-02.0	271270-019	7.1	1.0	229196	11/03/15 15:30	11/08/15 11:05	11/09/15 11:13
IE-09-01.0	271270-020	6.0	1.0	229196	11/03/15 10:15	11/08/15 11:05	11/09/15 11:13
IE-09-04.5	271270-021	7.6	1.0	229196	11/03/15 10:30	11/08/15 11:05	11/09/15 11:13
IE-12-15.0	271270-022	8.1	1.0	229196	11/03/15 10:55	11/08/15 11:05	11/09/15 11:13
IE-12-25.0	271270-023	8.1	1.0	229196	11/03/15 11:05	11/08/15 11:05	11/09/15 11:13
IE-11-15.0	271270-024	8.0	1.0	229196	11/03/15 11:20	11/08/15 11:05	11/09/15 11:13
IE-11-25.0	271270-025	8.0	1.0	229196	11/03/15 11:55	11/08/15 11:05	11/09/15 11:13
IE-13-15.0	271270-026	8.0	1.0	229196	11/03/15 12:15	11/08/15 11:05	11/09/15 11:13
IE-13-30.0	271270-027	8.0	1.0	229196	11/03/15 12:30	11/08/15 11:05	11/09/15 11:13
IE-13-45.0	271270-028	8.7	1.0	229196	11/03/15 12:50	11/08/15 11:05	11/09/15 11:13
IE-13-60.0	271270-029	7.3	1.0	229196	11/03/15 13:20	11/08/15 11:05	11/09/15 11:13

RL= Reporting Limit

Batch QC Report

pH

Lab #:	271270	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	METHOD
Project#:	15-1313A	Analysis:	EPA 9045D
Analyte:	pH	Units:	SU
Type:	SDUP	Diln Fac:	1.000
Matrix:	Soil		

Field ID	MSS Lab ID	Lab ID	MSS Result	Result	RL	RPD	Lim	Batch#	Sampled	Received	Prepared	Analyzed
ZZZZZZZZZZ	271088-001	QC811406	6.780	7.000	1.000	3	20	229103	10/27/15 16:50	10/28/15	11/05/15 12:54	11/05/15 14:06
IE-13-75.0	271270-010	QC811788	7.660	8.070	1.000	5	20	229196	11/03/15 13:40	11/03/15	11/08/15 11:05	11/09/15 11:13

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Laboratory Job Number 271270

Subcontracted Products

Forensic Analytical

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-10-04.0	11699481	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-04-02.0	11699482	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-04-04.0	11699483	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-07-02.0	11699484	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

3777 Depot Road, Suite 409, Hayward, CA 94545 / Telephone: (510) 887-8828 (800) 827-FASI / Fax: (510) 887-4218

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-07-04.0	11699485	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-06-02.0	11699486	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-06-04.0	11699487	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-05-02.0	11699488	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-05-04.0	11699489	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-13-75.0	11699490	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-03-02.0	11699491	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-03-04.0	11699492	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-08-02.0	11699493	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-08-04.0	11699494	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-02-02.0	11699495	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-02-04.0	11699496	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-01-02.0	11699497	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-01-04.0	11699498	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-10-02.0	11699499	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-09-01.0	11699500	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-09-04.5	11699501	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-12-15.0	11699502	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-12-25.0	11699503	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-11-15.0	11699504	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-11-25.0	11699505	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-13-15.0	11699506	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-13-30.0	11699507	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
IE-13-45.0	11699508	**Grey Soil**

Visual Estimation Results:

Matrix percentage of entire 100
Visual estimation percentage: **None Detected**
Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Curtis & Tompkins Ltd
Tracy Babjar
2323 Fifth St.

Berkeley, CA 94710

Client ID: 1137
Report Number: N007591
Date Received: 11/04/15
Date Analyzed: 11/10/15
Date Printed: 11/10/15

Job ID/Site: 271270 - SVCW WTP

PLM Report Number: N/A

FALI Job ID: 1137
Total Samples Submitted: 29
Total Samples Analyzed: 29

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
IE-13-60.0	11699509	**Tan Soil**

Visual Estimation Results:

Matrix percentage of entire	100
Visual estimation percentage:	**None Detected**
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 0.25%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

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Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 272012
ANALYTICAL REPORT

Iris Environmental
1438 Webster Street
Oakland, CA 94612

Project : 15-1313A
Location : SVCW WTP
Level : II

Sample ID	Lab ID	Sample ID	Lab ID
IE-01-02.0	272012-001	IE-07-04.0	272012-014
IE-01-04.0	272012-002	IE-08-02.0	272012-015
IE-02-02.0	272012-003	IE-08-04.0	272012-016
IE-02-04.0	272012-004	IE-09-04.5	272012-017
IE-03-02.0	272012-005	IE-10-02.0	272012-018
IE-03-04.0	272012-006	IE-10-04.0	272012-019
IE-04-02.0	272012-007	IE-11-25.0	272012-020
IE-04-04.0	272012-008	IE-12-25.0	272012-021
IE-05-02.0	272012-009	IE-13-15.0	272012-022
IE-05-04.0	272012-010	IE-13-30.0	272012-023
IE-06-02.0	272012-011	IE-13-45.0	272012-024
IE-06-04.0	272012-012	IE-13-60.0	272012-025
IE-07-02.0	272012-013	IE-13-75.0	272012-026

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 12/07/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**272012**
Client:	**Iris Environmental**
Project:	**15-1313A**
Location:	**SVCW WTP**
Request Date:	**11/30/15**
Samples Received:	**11/03/15**

This data package contains sample and QC results for twenty five soil samples, requested for the above referenced project on 11/30/15. The samples were received cold and intact.

Metals (EPA 6010B) TCLP Leachate:
No analytical problems were encountered.

Metals (EPA 6010B) WET Leachate:
No analytical problems were encountered.

CT # 272012

Subject: Re: 15-1313A - C&T Login Summary (271270)
From: Tracy Babjar <tracy.babjar@ctberk.com>
Date: 12/1/2015 9:22 AM
To: Bill Chen <BChen@irisenv.com>
CC: Craig Pelletier <craig@irisenv.com>

New update:
272012-005 alias 271270-011 not enough sample for WET.
272012-013 alias 271270-004 -WET is started but there is not enough sample for the TCLP.

Tracy Babjar
Project Manager
Curtis & Tompkins, Ltd.
510 204-2226
www.curtisandtompkins.com

On 11/30/2015 9:39 AM, Tracy Babjar wrote:

> Hi Bill,
>
> I will check sample volumes now and get these logged in for you.
>
> Tracy ☺
>
> Tracy Babjar
> Project Manager
> Curtis & Tompkins, Ltd.
> 510 204-2226
> www.curtisandtompkins.com
>
> On 11/30/2015 9:30 AM, Bill Chen wrote:
>
> > Tracy,
> >
> > I'd like to request the following analyses on the following samples:

C&T ID	IRIS ID	STLC Cr	TCLP Cr
271270-017	IE-01-02.0	X	X
271270-018	IE-01-04.0	X	–
271270-015	IE-02-02.0	X	–
271270-016	IE-02-04.0	X	X
271270-011	IE-03-02.0	X	–
271270-012	IE-03-04.0	X	–
271270-002	IE-04-02.0	X	X
271270-003	IE-04-04.0	X	X
271270-008	IE-05-02.0	X	X
271270-009	IE-05-04.0	X	X
271270-006	IE-06-02.0	X	X
271270-007	IE-06-04.0	X	–
271270-004	IE-07-02.0	X	X

~~CT# 271270~~ CT# 272012

Subject: RE: 15-1313A - C&T Login Summary (271270)
From: Bill Chen <BChen@irisenv.com>
Date: 11/30/2015 9:30 AM
To: Tracy Babjar <tracy.babjar@ctberk.com>
CC: "John.Goyette@ctberk.com" <John.Goyette@ctberk.com>, Craig Pelletier <craig@irisenv.com>

Tracy,

I'd like to request the following analyses on the following samples:

	C&T ID	IRIS ID	STLC Cr	TCLP Cr
1 -	271270-017	IE-01-02.0	X	X
2 -	271270-018	IE-01-04.0	X	–
3 -	271270-015	IE-02-02.0	X	–
4 -	271270-016	IE-02-04.0	X	X
5 -	271270-011	IE-03-02.0	X	–
6 -	271270-012	IE-03-04.0	X	–
7 -	271270-002	IE-04-02.0	X	X
8 -	271270-003	IE-04-04.0	X	X
9 -	271270-008	IE-05-02.0	X	X
10 -	271270-009	IE-05-04.0	X	X
11 -	271270-006	IE-06-02.0	X	X
12 -	271270-007	IE-06-04.0	X	–
13 -	271270-004	IE-07-02.0	X	X
14 -	271270-005	IE-07-04.0	X	X
15 -	271270-013	IE-08-02.0	X	–
16 -	271270-014	IE-08-04.0	X	–
	~~271270-020~~	~~IE-09-01.0~~	~~X~~	
17 -	271270-021	IE-09-04.5	X	–
18 -	271270-019	IE-10-02.0	X	X
19 -	271270-001	IE-10-04.0	X	–
	~~271270-024~~	~~IE-11-15.0~~	~~X~~	~~–~~
20 -	271270-025 ?	IE-11-25.0	X	–
	~~271270-022~~	~~IE-12-15.0~~	~~X~~	~~–~~
21 -	271270-023 ?	IE-12-25.0	X	–
22 -	271270-026 ?	IE-13-15.0	X	–
23 -	271270-027	IE-13-30.0	X	–
24 -	271270-028	IE-13-45.0	X	–
25 -	271270-029	IE-13-60.0	X	–
26 -	271270-010	IE-13-75.0	X	–

I understand that there may not be enough sample remaining for some of these tests – please let me know which ones if any.

Hope you had a great Thanksgiving!

271270

IRIS ENVIRONMENTAL **CHAIN-OF-CUSTODY**

1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

Date: 11 / 3 / 15 Page: 1 of 3 **№** 003452

Sampler Name(s): Bill Chen, Claudia Mack
Signature(s): Claudia Mack

	Sample ID	Date	Time	Matrix	Pres.	TPH-g 8260B	TPH-d/mo 8015C	VOCs 8260B	PAHs 8270 SIM	PCB 8082	CAM17 Metals 6010C/7471	OCPs 8081	Asbestos CARB435	pH 9045C	Moisture CLP	Number of Containers
1	IE-10-04.0	11/3/15	1535	soil	1 unpres 1 HNO3	X	X	X	X	X	X	X	X	X	X	7
2	IE-04-02.0		1425			X	X	X	X	X	X	X	X	X	X	
3	IE-04-04.0		1430			X	X	X	X	X	X	X	X	X	X	
4	IE-03-02.0		1435			X	X	X	X	X	X	X	X	X	X	
5	IE-03-04.0		1440			X	X	X	X	X	X	X	X	X	X	
6	IE-06-02.0		1450			X	X	X	X	X	X	X	X	X	X	
7	IE-06-04.0		1455			X	X	X	X	X	X	X	X	X	X	
8	IE-05-02.0		1040			X	X	X	X	X	X	X	X	X	X	
9	IE-05-04.0		1750			X	X	X	X	X	X	X	X	X	X	

PROJECT INFORMATION

Project Name: JVCW WTP
Project Number: 15-1313A
Contact Person: C Pelletier, B. Chen, C Mack
E-mail: craig@irisenv.com, bill@irisenv.com, cmack@irisenv.com
Contact Telephone: 510-834-4747
Report: Routine (Level 2) Level 3 Level 4 EDD
TAT: 10-day 5-day 72-hr 48-hr 24-hr Other:

Special Instructions/Comments:

Report Dry-weight basis

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature:	Signature:
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015 19.33	Time/Date: 11/03/15 19 33
RELINQUISHED BY:	RECEIVED BY:
Printed Name:	Printed Name:
Signature:	Signature:
Company:	Company:
Time/Date:	Time/Date:

271270

IRIS ENVIRONMENTAL
1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

CHAIN-OF-CUSTODY

Date: 11/3/15 Page: 2 of 3 Nº 003797

Sampler Name(s): Bill Chen, Claudia Mack
Signature(s):

	Sample ID	Date	Time	Matrix	Pres.
10	IE-13-75.0	11/3/15	1340	soil	Iced
11	IE-03-02.0		1435		
12	IE-03-04.0		1455		
13	IE-08-02.0		1500		
14	IE-08-04.0		1510		
15	IE-02-02.0		1515		
16	IE-02-04.0		1520		
17	IE-01-02.0		1600		
18	IE-01-04.0		1605		
19	IE-10-02.0		1530		

Analyses Required

TPH-g 8260B	TPH-d and -mo 8015	VOCs 8260B	PAHs 8270SIM	PCB 8082	CAM17 Metals 6010 7471	OCPs 8081	Asbestos CARB435	pH 9045C	Moisture CLP						Number of Containers
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7

PROJECT INFORMATION

Project Name: SVCW WTP
Project Number: 15-1313A
Contact Person: C Pelletier, B Chen, C Mack
E-mail: craig@irisenv.com, bill@irisenv.com, claudia@irisenv.com
Contact Telephone: (510) 834-4747
Report: Routine (Level 2) Level 3 Level 4 EDD
TAT: 10-day 5-day 72-hr 48-hr 24-hr Other:
Special Instructions/Comments:
Report Dry-weight Basis

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature:	Signature:
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015 19:33	Time/Date: 11/03/15 1933
RELINQUISHED BY:	RECEIVED BY:
Printed Name:	Printed Name:
Signature:	Signature:
Company:	Company:
Time/Date:	Time/Date:

271270

IRIS ENVIRONMENTAL — **CHAIN-OF-CUSTODY**

1438 Webster Street, Suite 302
Oakland, California 94612
(510) 834-4747 tel
(510) 834-4199 fax

Date: 11/3/15 Page: 3 of 3 No: 2887

Sampler Name(s): Bill Chen, Claudia Mack
Signature(s): Claudia Mack

	Sample ID	Date	Time	Matrix	Pres.
20	IE-09-01.0	11/3/15	1015	soil	1 MeOH 4 unpres
21	IE-09-04.5		1020		
22	IE-12-15.0		1055		
23	IE-12-25.0		1105		
24	IE-11-15.0		1120		
25	IE-11-25.0		1155		
26	IE-13-15.0		1215		
27	IE-13-30.0		1230		
28	IE-13-45.0		1250		
29	IE-13-60.0		1320		

Analyses Required

TPH-g 8260B	TPH-d/mo 8015M TSGC	VOCs 8260B	PAHs 8270SIM	PCB 8082	CAM17Metals 6010/7471	OCPs 8081	Asbestos CARB435	PH 9045C	Moisture CLP						Number of Containers
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7
X	X	X	X	X	X	X	X	X	X						7

PROJECT INFORMATION

Project Name: SVWTP(R1) SVCW WTP
Project Number: 15-133A
Contact Person: C. Pelletier, B. Chen, C. Mack
E-mail: cmp@irsenv.com, bll@irsenv.com, claudia@irsenv.com
Contact Telephone: (510) 834-4747
Report: Routine (Level 2) Level 3 Level 4 (EDD)
TAT: 10-day (5-day) 72-hr 48-hr 24-hr Other:

Special Instructions/Comments:

Report Dry-weight Basis

RELINQUISHED BY:	RECEIVED BY:
Printed Name: Claudia Mack	Printed Name: Shane Lawton
Signature: Claudia Mack	Signature: Shane Lawton
Company: Iris Environmental	Company: Curtis & Tompkins
Time/Date: 11/3/2015, 19:33	Time/Date: 11/03/15 19:33
RELINQUISHED BY:	**RECEIVED BY:**
Printed Name:	Printed Name:
Signature:	Signature:
Company:	Company:
Time/Date:	Time/Date:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 271270 Date Received 11/3/15 Number of coolers 1
Client ERIS Project SVCW WTP

Date Opened 11/3 By (print) SC (sign) [signature]
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO N/A
3. Were custody papers dry and intact when received? _____ YES NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ YES NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☐ Temperature blank(s) included? ☐ Thermometer ☐ IR Gun

☒ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
   If YES, what time were they transferred to freezer? 11/03/15 @ 2325
9. Did all bottles arrive unbroken/unopened? _____ YES NO
10. Are there any missing / extra samples? _____ YES NO
11. Are samples in the appropriate containers for indicated tests? _____ YES NO
12. Are sample labels present, in good condition and complete? _____ YES NO
13. Do the sample labels agree with custody papers? _____ YES NO
14. Was sufficient amount of sample sent for tests requested? _____ YES NO
15. Are the samples appropriately preserved? _____ YES NO N/A
16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A
17. Did you document your preservative check? _____ YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A
21. Was the client contacted concerning this sample delivery? _____ YES NO
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 11, 10/15

Curtis & Tompkins, Ltd.

Detections Summary for 272012

Results for any subcontracted analyses are not included in this summary.

Client : Iris Environmental
Project : 15-1313A
Location : SVCW WTP

Client Sample ID : IE-01-02.0 Laboratory Sample ID : 272012-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.42		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-01-04.0 Laboratory Sample ID : 272012-002

No Detections

Client Sample ID : IE-02-02.0 Laboratory Sample ID : 272012-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.51		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-02-04.0 Laboratory Sample ID : 272012-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.36		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-03-04.0 Laboratory Sample ID : 272012-006

No Detections

Client Sample ID : IE-04-02.0 Laboratory Sample ID : 272012-007

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.76		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-04-04.0 Laboratory Sample ID : 272012-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	1.2		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-05-02.0 Laboratory Sample ID : 272012-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.85		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-05-04.0 Laboratory Sample ID : 272012-010

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.36		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-06-02.0 Laboratory Sample ID : 272012-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.31		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-06-04.0 Laboratory Sample ID : 272012-012

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.45		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-07-02.0 Laboratory Sample ID : 272012-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.25		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-07-04.0 Laboratory Sample ID : 272012-014

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.37		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-08-02.0 Laboratory Sample ID : 272012-015

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.26		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-08-04.0 Laboratory Sample ID : 272012-016

No Detections

Client Sample ID : IE-09-04.5 Laboratory Sample ID : 272012-017

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.26		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-10-02.0 Laboratory Sample ID : 272012-018

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.48		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-10-04.0 Laboratory Sample ID : 272012-019

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Chromium	0.57		0.25	mg/L	STLC	10.00	EPA 6010B	WET

Client Sample ID : IE-11-25.0 Laboratory Sample ID : 272012-020

No Detections

Client Sample ID : IE-12-25.0 Laboratory Sample ID : 272012-021

No Detections

Client Sample ID : IE-13-15.0 Laboratory Sample ID : 272012-022

No Detections

Client Sample ID : IE-13-30.0 Laboratory Sample ID : 272012-023

No Detections

Client Sample ID : IE-13-45.0 Laboratory Sample ID : 272012-024

No Detections

Client Sample ID : IE-13-60.0 Laboratory Sample ID : 272012-025

No Detections

Client Sample ID : IE-13-75.0 Laboratory Sample ID : 272012-026

No Detections

Curtis & Tompkins, Ltd.

Chromium

Lab #:	272012	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3010A
Project#:	15-1313A	Analysis:	EPA 6010B
Analyte:	Chromium	Sampled:	11/03/15
Matrix:	TCLP Leachate	Received:	11/03/15
Units:	mg/L	Prepared:	12/02/15
Diln Fac:	10.00	Analyzed:	12/06/15
Batch#:	230009		

Field ID	Type	Lab ID	Result	RL
IE-01-02.0	SAMPLE	272012-001	ND	0.050
IE-02-04.0	SAMPLE	272012-004	ND	0.050
IE-04-02.0	SAMPLE	272012-007	ND	0.050
IE-04-04.0	SAMPLE	272012-008	ND	0.050
IE-05-02.0	SAMPLE	272012-009	ND	0.050
IE-05-04.0	SAMPLE	272012-010	ND	0.050
IE-06-02.0	SAMPLE	272012-011	ND	0.050
IE-07-04.0	SAMPLE	272012-014	ND	0.050
IE-10-02.0	SAMPLE	272012-018	ND	0.050
	BLANK	QC815139	ND	0.050

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Chromium

Lab #:	272012	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	EPA 3010A
Project#:	15-1313A	Analysis:	EPA 6010B
Analyte:	Chromium	Batch#:	230009
Field ID:	IE-02-04.0	Sampled:	11/03/15
MSS Lab ID:	272012-004	Received:	11/03/15
Matrix:	TCLP Leachate	Prepared:	12/02/15
Units:	mg/L	Analyzed:	12/06/15

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac
BS	QC815140		0.1000	0.09925	99	80-120			1.000
BSD	QC815141		0.1000	0.1022	102	80-120	3	20	1.000
MS	QC815142	<0.01000	0.1000	0.09793	98	80-120			10.00
MSD	QC815143		0.1000	0.09569	96	80-120	2	20	10.00

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Chromium

Lab #:	272012	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	WET
Project#:	15-1313A	Analysis:	EPA 6010B
Analyte:	Chromium	Diln Fac:	10.00
Matrix:	WET Leachate	Sampled:	11/03/15
Units:	mg/L	Received:	11/03/15

Field ID	Type	Lab ID	Result	RL	Batch#	Prepared	Analyzed
IE-01-02.0	SAMPLE	272012-001	0.42	0.25	230047	12/03/15	12/04/15
IE-01-04.0	SAMPLE	272012-002	ND	0.25	230047	12/03/15	12/04/15
IE-02-02.0	SAMPLE	272012-003	0.51	0.25	230047	12/03/15	12/04/15
IE-02-04.0	SAMPLE	272012-004	0.36	0.25	230047	12/03/15	12/04/15
IE-03-04.0	SAMPLE	272012-006	ND	0.25	230047	12/03/15	12/04/15
IE-04-02.0	SAMPLE	272012-007	0.76	0.25	230047	12/03/15	12/04/15
IE-04-04.0	SAMPLE	272012-008	1.2	0.25	230047	12/03/15	12/04/15
IE-05-02.0	SAMPLE	272012-009	0.85	0.25	230047	12/03/15	12/04/15
IE-05-04.0	SAMPLE	272012-010	0.36	0.25	230047	12/03/15	12/04/15
IE-06-02.0	SAMPLE	272012-011	0.31	0.25	230047	12/03/15	12/04/15
IE-06-04.0	SAMPLE	272012-012	0.45	0.25	230047	12/03/15	12/04/15
IE-07-02.0	SAMPLE	272012-013	0.25	0.25	230047	12/03/15	12/04/15
IE-07-04.0	SAMPLE	272012-014	0.37	0.25	230047	12/03/15	12/04/15
IE-08-02.0	SAMPLE	272012-015	0.26	0.25	230047	12/03/15	12/04/15
IE-08-04.0	SAMPLE	272012-016	ND	0.25	230047	12/03/15	12/04/15
IE-09-04.5	SAMPLE	272012-017	0.26	0.25	230047	12/03/15	12/04/15
IE-10-02.0	SAMPLE	272012-018	0.48	0.25	230047	12/03/15	12/04/15
IE-10-04.0	SAMPLE	272012-019	0.57	0.25	230095	12/06/15	12/06/15
IE-11-25.0	SAMPLE	272012-020	ND	0.25	230095	12/06/15	12/06/15
IE-12-25.0	SAMPLE	272012-021	ND	0.25	230095	12/06/15	12/06/15
IE-13-15.0	SAMPLE	272012-022	ND	0.25	230095	12/06/15	12/06/15
IE-13-30.0	SAMPLE	272012-023	ND	0.25	230095	12/06/15	12/06/15
IE-13-45.0	SAMPLE	272012-024	ND	0.25	230095	12/06/15	12/06/15
IE-13-60.0	SAMPLE	272012-025	ND	0.25	230095	12/06/15	12/06/15
IE-13-75.0	SAMPLE	272012-026	ND	0.25	230095	12/06/15	12/06/15
	BLANK	QC815307	ND	0.25	230047	12/03/15	12/04/15
	BLANK	QC815489	ND	0.25	230095	12/06/15	12/06/15

ND= Not Detected
RL= Reporting Limit

Batch QC Report

Chromium

Lab #:	272012	Location:	SVCW WTP
Client:	Iris Environmental	Prep:	WET
Project#:	15-1313A	Analysis:	EPA 6010B
Analyte:	Chromium	Units:	mg/L
Matrix:	WET Leachate		

Field ID	Type	MSS Lab ID	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac	Batch#	Sampled	Received	Prepared	Analyzed
	BS		QC815308		0.1000	0.09288	93	80-120			1.000	230047			12/03/15	12/04/15
	BSD		QC815309		0.1000	0.09250	93	80-120	0	20	1.000	230047			12/03/15	12/04/15
IE-01-02.0	MS	272012-001	QC815310	0.4224	0.5000	0.8488	85	80-120			10.00	230047	11/03/15	11/03/15	12/03/15	12/04/15
IE-01-02.0	MSD	272012-001	QC815311		0.5000	0.8663	89	80-120	2	20	10.00	230047	11/03/15	11/03/15	12/03/15	12/04/15
	BS		QC815490		0.1000	0.09913	99	80-120			1.000	230095			12/06/15	12/06/15
	BSD		QC815491		0.1000	0.1023	102	80-120	3	20	1.000	230095			12/06/15	12/06/15
ZZZZZZZZZZ	MS	271952-001	QC815492	<0.05000	0.5000	0.4767	95	80-120			10.00	230095	10/10/15	11/23/15	12/06/15	12/06/15
ZZZZZZZZZZ	MSD	271952-001	QC815493		0.5000	0.4769	95	80-120	0	20	10.00	230095	10/10/15	11/23/15	12/06/15	12/06/15

RPD= Relative Percent Difference

Appendix B

TECHNICAL MEMORANDUM

FREYER & LAURETA, INC.
SOIL CORROSIVITY EVALUATION
SILICON VALLEY CLEAN WATER (SVCW)

Prepared for: Richard Laureta, P.E., Freyer and Laureta, Inc.

Prepared by: Matt Snow, E.I.T., V&A Consulting Engineers
Dan Day, V&A Consulting Engineers

Reviewed by: Chelsea Teall, P.E., V&A Consulting Engineers
Glenn Willson, P.E., V&A Consulting Engineers

Date: December 2015

V&A Project No.: 15-0300

1.0 INTRODUCTION

V&A Consulting Engineers (V&A) was retained by Freyer and Laureta, Inc., to perform a soil corrosivity evaluation for the Silicon Valley Clean Water (SVCW) wastewater treatment plant located at 1400 Radio Rd, Redwood City, California. A map of the project location is presented in Figure 1-1. The soil characterized was in a drained and dried ornamental pond previously filled with recycled water.

V&A evaluated the corrosivity of the soil in proximity of buried metallic or concrete piping between grade and down to 15 feet below grade. The discharge piping for the RLS (receiving lift station) and PFDS will both be approximately 10 to 15 feet below grade. The RLS will have an invert elevation of about 80 feet below grade and the PFDS will be approximately 30 feet below grade; both the RLS and PFDS are outside the scope of this soil corrosivity evaluation.

V&A achieved the following objectives during this evaluation.

1. Reviewed existing corrosion and geotechnical data.
2. Performed an in situ soil resistivity evaluation.
3. Analyzed the results of laboratory testing on soil samples that included measuring resistivity and chemical constituents.
4. Provided corrosion control recommendations for discharge piping associated with the RLS and PFDS.

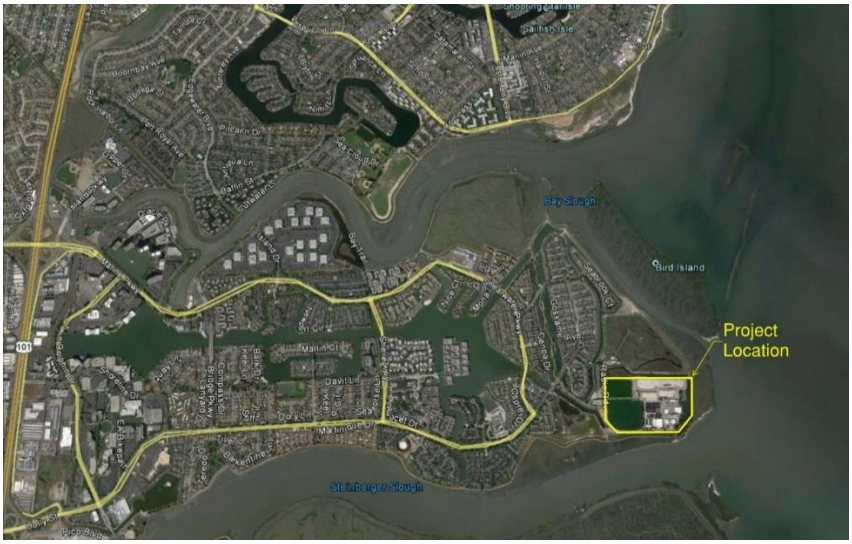

Figure 1-1. Project Location Map

2.0 TEST METHODS

In attempting to predict corrosion problems associated with a particular type of structure prior to installation, it is necessary to investigate the soil conditions the structure will encounter. Since corrosion is an electrochemical process that is accompanied by current flow, the electrochemical characteristics of a soil are of primary importance when evaluating corrosivity. Test methods utilized during this investigation reflect the current practices for evaluating soil corrosivity.

2.1 In Situ Soil Resistivity Evaluation

2.1.1 Wenner 4-Electrode Method General Information

The Wenner 4-Electrode Method determines how easily an electric current flows through an electrolyte, which directly relates to the degree of corrosivity of the electrolyte. Each test location is set up by driving four metallic pins into the ground in a straight line at equidistant spacing. Each pin is driven into the ground to a depth that allows for adequate contact between the soil and the pin. An insulated harness containing multiple wires is laid out along the pins, and clips are used to create a metallic connection between each pin and the corresponding wire inside the harness. Each of the wires is referred to as one of the following: C1, P1, P2, or C2. Pins C1 and C2 are used to provide electric current to the soil and are positioned as the outer two pins of the array while pins P1 and P2 are used to measure potential and are positioned as the inner two pins of the array. Figure 2-1 is presented to visually represent this concept. The wires are connected to a soil resistance meter, and the resistance of the soil mass below the pins is determined as follows.

The soil resistance meter discharges alternating current into the electrolyte between pins C1 and C2 in a hemispherical manner. Due to the resistance of the soil, the current creates a voltage gradient that is proportional to the average resistance of the soil mass to a depth equal to the spacing between each pin. While the alternating current is flowing through the electrolyte, the soil resistance meter measures the voltage drop, or potential, between pins P1 and P2. The average resistance of the soil mass is calculated by the meter by rearranging Ohm's Law (V=IR) to solve for resistance. Once the resistance value from the display of the meter is recorded, the spacing between each pin is adjusted and the measurement is repeated. The harness allows a series of four pins to be connected for resistance measurements to different soil depths. The four pins associated with each soil depth can be activated for a measurement by using a selector switch box wired to the appropriate test pins.

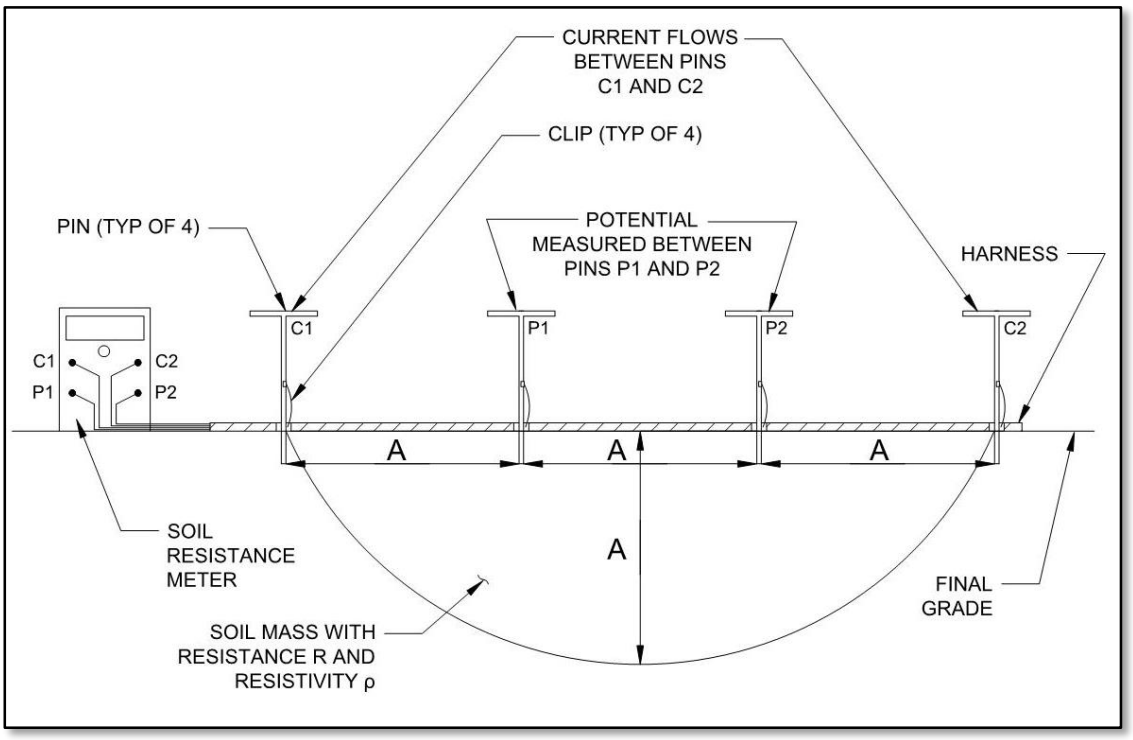

Figure 2-1. Wenner 4-Electrode Method Schematic

At each location, soil resistance measurements were recorded at pin spacings of 2.5, 5, 7.5, 10, and 15 feet. The meter measures soil resistances, and the soil resistance values recorded from the meter display were used to calculate soil resistivity to depth and resistivity by layer.

2.1.2 Resistivity to Depth

Average resistivity (ρ) of the soil mass below the pins to a depth equal to the spacing between each pin is calculated with the following equation:

$$\rho = 2 \cdot \pi \cdot A \cdot R$$

Where:

ρ	=	Average soil resistivity to a depth of *A* (ohm-cm)
A	=	Distance between electrodes (cm)
R	=	Soil resistance to a depth of *A*, soil resistance meter reading (ohm)
π	=	3.14 (approximately)

The product of this equation provides a resistivity value that represents the average resistivity of the soil below the pins to a depth equal to the pin spacing. The resistivity values were then compared to generally accepted ranges of resistivity and their corresponding level of corrosiveness. The in situ resistance measurements and calculated resistivity values are presented in Section 3.1.1.

2.1.3 Resistivity by Layer (Barnes Layer Soil Resistivity)

The recorded soil resistance values were also used to calculate the resistivity of multiple layers of soil, as opposed to the average resistivity of the soil from grade to a desired depth. For example, after the resistance of the soil mass to a depth of five feet is measured and the resistance of the soil mass to a depth of ten feet is measured, the average resistivity of the soil layer between five feet and ten feet below grade may be calculated. This method of calculating the resistivity of a layer of soil is referred to as the Barnes Layer Soil Resistivity Calculation; Figure 2-2 is presented to visually represent this concept.

When determining the resistivity and corresponding corrosivity of the electrolyte, the Barnes Layer Soil Resistivity calculations are used in lieu of the average resistivity to depth calculations. This is due to the Barnes Layer Resistivity Calculation's ability to isolate the layer of soil that the proposed structure will be in contact with while neglecting the soil in layers that will not be in contact with the structure. The soil in the layers that are not in contact with the structure will have little to no effect on the corrosion rate of the water pipeline. By isolating the layer of soil that will be in contact with the proposed structure, a more accurate representation of the proposed structure's environment may be obtained.

The average soil layer resistivity (ρ_{A-B}) is calculated with the following equation.

$$\rho_{A-B} = 2 \cdot \pi \cdot (B - A) \cdot R_{A-B}$$

Where:

ρ_{A-B}	=	Average resistivity of soil layer between depth *A* to depth *B* (ohm-cm)
A	=	Depth below grade to top of soil layer (cm)
B	=	Depth below grade to bottom of soil layer (cm)
R_{A-B}	=	Resistance of soil layer between depth *A* and depth *B* (ohm)
π	=	3.14 (approximately)

The individual soil layer resistances (R_{A-B}) were calculated using the following equation.

$$R_{A-B} = (R_A \cdot R_B)/(R_A - R_B)$$

Where:

R_{A-B}	=	Resistance of soil layer between depth *A* and depth *B* (ohm)
R_A	=	Soil resistance to a depth of *A*, soil resistance meter reading (ohm)
R_B	=	Soil resistance to a depth of *B*, soil resistance meter reading (ohm)

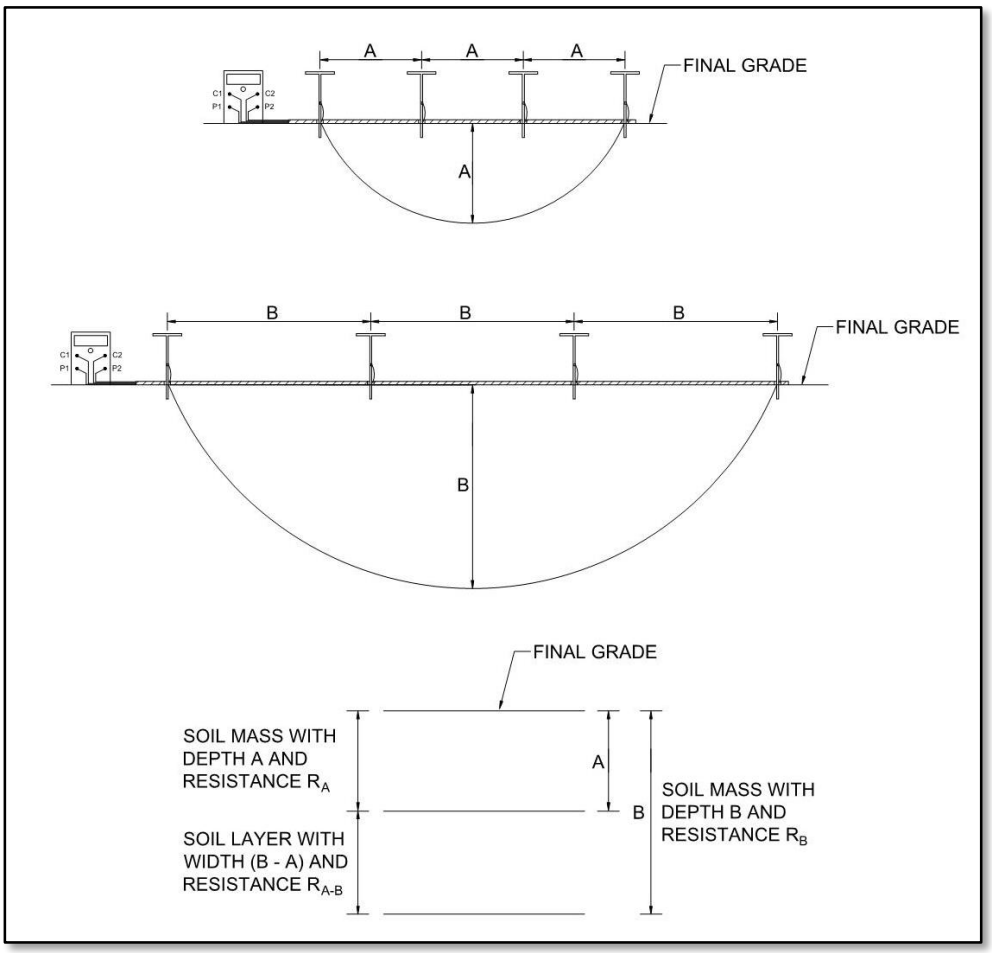

Figure 2-2. Barnes Method for Determining the Resistance of a Soil Layer

The results of the Barnes Layer Soil Resistivity Calculations are presented in Section 3.1.1.

2.2 Laboratory Soil Resistivity Test Methods

Soil samples were obtained from the site and tested in the laboratory. The as-received and saturated (minimum) soil resistivity was determined using a soil box (see Figure 2-3). The resistivity testing was performed in accordance with ASTM G57. A discussion of the test procedure is provided below.

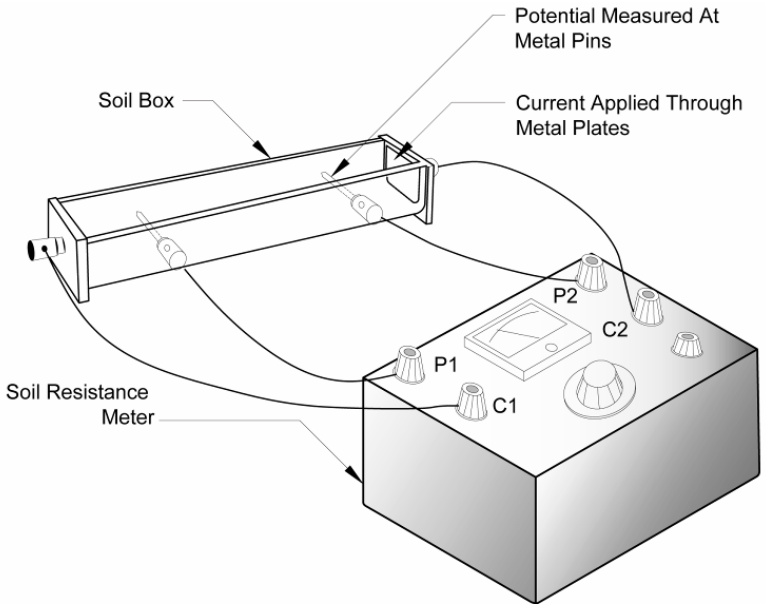

Figure 2-3. Soil Resistivity Measurement Using the Soil Box Method

The test apparatus consists of a small plastic box with metal end plates for passing current through the soil sample packed tightly into the box. Current flows through the sample, causing a voltage drop across the sample, which is measured between the two pins. The current is supplied by a Soil Resistance Meter, which also measures the voltage drop between Pins P1 and P2. The meter calculates the soil resistance using Ohm's Law, stated as "resistance equals the voltage divided by the current," or R = V/I. The geometry of the soil box is designed so that the measured soil resistance is also the sample resistivity in ohm-cm.

Soil samples were placed in the soil box, and the soil resistivity was measured in the "as-received" state. Distilled water was added to the soil sample, and the resistivity was measured after each addition. As the soil sample becomes more saturated with water, the soil resistivity decreases until the minimum soil resistivity is reached. The saturated (minimum) resistivity represents the most corrosive conditions in the soil to iron and steel structures, which occurs when all the soluble salts are taken into solution. The dissolved salts provide less resistance to electric current flow in the soil, which facilitates corrosion activity on buried metal.

2.3 Soil Chemical Analysis Test Methods

Soil samples obtained from the site were tested for pH and concentrations of water soluble chloride, sulfate, and bicarbonate ions. The samples were sent to Curtis & Tompkins, Ltd. Analytical Laboratories in Berkeley, California for analysis. The following standard analytical methods were utilized for determining these chemical constituents:

- pH by EPA 9045D
- Inorganic anions (chloride and sulfate) by EPA 300.0
- Bicarbonate Alkalinity (as $CaCO_3$) by SM 2320B

3.0 TEST RESULTS

Data obtained during this investigation has been summarized in tabular form for analysis and presentation. Resistivity values as measured and calculated from the field and laboratory have been compared to generally accepted ranges of soil resistivity and the corresponding degree of corrosivity. The results of the chemical analysis are also presented in this section as well as a discussion of the results as they pertain to the corrosivity of soil.

A composite sample composed of smaller samples from four boring locations (7-02.0, 9-01.0, 11-15.0, and 12-15.0) was obtained by Iris Environmental for resistivity testing and chemical analysis. The samples were blended in equal amounts to provide an average of all four samples. Soil sample locations and depths were not provided to V&A. In addition, V&A conducted in situ resistivity testing at four (4) locations, which are identified in Figure 3-1.

3.1 Soil Resistivity Test Results

Understanding how easily current will travel through a medium surrounding a metallic object is important in evaluating the corrosive environment. Resistivity is an inverse measure of the ability of a soil to conduct an electric current, with higher resistivity resulting in less current flow. Corrosion rate depends on current flow between a metal and the adjacent medium. Normally, the corrosion activity on metals in soil increases as soil resistivity decreases. The following table correlates resistivity values with degree of corrosivity. The interpretation of this correlation varies somewhat among corrosion engineers. However, Table 3-1 is a generally accepted guide.

Table 3-1. Effect of Soil Resistivity on the Corrosivity of Soil [1]

Soil Resistivity (ohm-cm)	Degree of Corrosivity
< 500	Very High
500 – 1,000	High
1,000 – 2,000	Moderate
2,000 – 10,000	Mild
> 10,000	Negligible

1 Peabody, A. and Parker, M., "Corrosion Basics, an Introduction", Ed. by Brasunas, A., NACE International, p. 191 (1984)

3.1.1 In Situ Resistivity

The first test method utilized by V&A to evaluate the resistivity of the soil within the project location is the Wenner 4-Electrode Method per ASTM G57. This in situ soil resistivity test was conducted at four locations chosen by Freyer and Laureta, Inc., on October 30th, 2015. A site map of the resistivity test locations is presented below as Figure 3-1.

Figure 3-1. In Situ Resistivity Locations

The following Table 3-2 features the resistance to depth values that were recorded from the display of the soil resistance meter, the calculated resistance of each layer of soil, the calculated average resistivity of the soil to depth, the calculated resistivity of each layer of soil, and the corresponding degree of corrosivity of the soil based on the resistivity values. As shown in Figure 3-1, the resistivity of all soil layers measured in all locations was between 25 and 214 ohm-cm, which is considered *very highly corrosive* to steel.

Table 3-2. In Situ Resistivity Results

Site Number	Depth (feet)	Resistance to Depth, Meter Reading (ohm)	Layer (feet)	Resistance of Soil Layer (ohm)	Resistivity of Soil Layer (ohm-cm)	Degree of Corrosivity for Layer
C-301	2.5	0.21	0 - 2.5	0.21	101	Very High
	5	0.12	2.5 - 5	0.28	134	Very High
	7.5	0.07	5 - 7.5	0.17	80	Very High
	10	0.03	7.5 - 10	0.05	25	Very High
	15	0.02	10 - 15	0.06	57	Very High
C-302	2.5	0.29	0 - 2.5	0.29	139	Very High
	5	0.15	2.5 - 5	0.31	149	Very High
	7.5	0.08	5 - 7.5	0.17	82	Very High
	10	0.05	7.5 - 10	0.13	64	Very High
	15	0.02	10 - 15	0.03	32	Very High
C-303	2.5	0.19	0 - 2.5	0.19	91	Very High
	5	0.13	2.5 - 5	0.41	197	Very High
	7.5	0.07	5 - 7.5	0.15	73	Very High
	10	0.04	7.5 - 10	0.09	45	Very High
	15	0.03	10 - 15	0.12	115	Very High
C-304	2.5	0.33	0 - 2.5	0.33	158	Very High
	5	0.19	2.5 - 5	0.45	214	Very High
	7.5	0.11	5 - 7.5	0.26	125	Very High
	10	0.07	7.5 - 10	0.19	92	Very High
	15	0.04	10 - 15	0.09	89	Very High

3.1.2 Laboratory Resistivity

Laboratory resistivity measurements were performed by Cooper Testing Labs, Inc. and reported by Curtis & Tompkins, Ltd. The as-received and saturated (minimum) resistivity was determined for the composite sample using a soil box as described in Section 2.2. Table 3-3 lists the as-received and saturated soil resistivity for the composite sample. The soil is most corrosive at its saturated resistivity. In real world conditions, the soil may become saturated when it rains or when the ornamental pond is filled. The as-received and saturated soil resistivity were 61 and 58 ohm-cm, respectively, which are both considered *very highly corrosive* to iron and steel pipe.

Table 3-3. Summary of Laboratory Soil Resistivity Data*

Iris Environmental Sample ID	Resistivity (ohm-cm)	
	As-Received	Saturated
11-15.0/12-15.0/9-01.0/7-02.0	61	58

* Analyzed by Cooper Testing Labs, Palo Alto, California.

3.2 Soil Chemical Analysis Test Results

Soil chemical analysis was performed by Curtis & Tompkins, Ltd. In Berkeley, California using the methods described in Section 2.3. A wide variety of water-soluble salts are typically found in soils. Two soils having the same resistivity may have significantly different corrosion characteristics, depending on the specific ions available. The major constituents which accelerate corrosion are chlorides, sulfates, bicarbonates, and the acidity (pH) of the soil. Table 3-4 presents the laboratory analytical results for these constituents.

Table 3-4. Summary of Soil Chemical Analysis Data*

Soil Boring Sample*	pH	Chloride (mg/kg)	Sulfate (mg/kg)	Bicarbonate (mg/kg)
11-15.0/12-15.0/9-01.0/7-02.0	7.6	13,000	2,900	320

* Analyzed by Curtis & Tompkins, Ltd., Berkeley, California.

3.2.1 Acidity

Acidity, as indicated by the pH value, is an important factor influencing the corrosivity of soil. Lower pH (more acidic) soil will be more corrosive to buried metal and concrete structures. When the pH increases above 7.0 (the neutral value) the soil becomes more alkaline. In alkaline environments, iron and steel form a protective surface oxide layer. This is referred to as passivation. V&A developed Table 3-5, which correlates the effect of pH on the corrosion rate (corrosivity) for buried iron and

steel pipe. The pH of the tested soil sample is 7.6. This is considered *negligibly corrosive* to buried iron, steel, and reinforced concrete.

Table 3-5. Effects of pH on Soil Corrosivity[2, 3]

pH	Soil Corrosivity
< 5.5	High
5.5 - 6.5	Moderate
6.5 - 7.5	Mild
> 7.5	Negligible

3.2.2 Chloride Ions

Chloride ions tend to break down protective surface oxide films and render metal surfaces susceptible to corrosion. Table 3-6 shows the effect of chloride ions on the corrosivity of soil to buried iron and steel pipe. The water-soluble chloride concentration in the composite soil sample was 13,000 mg/kg, which is considered *very highly corrosive* to buried iron and steel pipe.

Table 3-6. Effects of Chloride Ions on Soil Corrosivity

Chloride Concentration (ppm)	Soil Corrosivity
> 5,000	Very High
1,500 - 5,000	High
500 - 1,500	Moderate
100 - 500	Mild
< 100	Negligible

3.2.3 Sulfate Ions

Sulfate ions will reduce soil resistivity, which facilitates metal corrosion; however, sulfates in soil do not directly attack iron or steel. Sulfate ions will attack the Portland cement matrix in concrete, causing it to expand and crack. This exposes steel reinforcement, which can then corrode. Table 3-7 correlates the effect of sulfates on soil corrosivity. The water-soluble sulfate concentration in the composite soil sample was 2,900 mg/kg. This is considered *very highly corrosive* to buried reinforced concrete structures and buried iron and steel pipe by lowering the soil resistivity.

2 Romanoff, M., "Underground Corrosion", NACE International, p. 8 (1989)

3 Uhlig H., "Corrosion and Corrosion Control", 2nd Edition, John Wiley & Sons Inc., pp.98-106 (1971); V&A's experience

Table 3-7. Effects of Sulfate Ions on Soil Corrosivity[4]

Sulfate Concentration (ppm)	Soil Corrosivity
> 2,000	Very High
1,000 - 2,000	Moderate
< 1,000	Negligible

3.2.4 Bicarbonate Ions

Bicarbonate ions reduce soil resistivity, which facilitates metal corrosion; however, bicarbonates in soil do not directly attack iron or steel. The bicarbonate ion concentration in the soil sample is 320 mg/kg. This concentration would contribute to lowering the soil resistivity, therefore promoting corrosion of buried iron and steel pipe.

4 V&A's interpretation of Table 8.22.2, Bridge Design Specifications, California Department of Transportation (2000)

4.0 CONCLUSIONS

- The in situ soil resistivity determined by V&A indicates the soil to a depth of 15 feet is *very highly corrosive* to buried iron and steel pipe. Likewise, the as-received and saturated resistivities measured in the laboratory indicate the soil is *very highly corrosive* to buried iron and steel pipe.
- The soil pH at the project site is *negligibly corrosive* to buried concrete and metallic structures.
- The high chloride concentration of the composite soil sample indicates the soil at the project site is *very highly corrosive* to buried iron and steel pipe.
- The sulfate concentration of the composite soil sample indicates the soil at the project site is *very highly corrosive* to buried reinforced concrete structures. The high sulfate concentration contributes to the exceedingly low soil resistivity indicative of very highly corrosive conditions to buried iron and steel pipe.
- It should be noted that no locations or sampling depths were provided to V&A for the soil samples that made up the composite soil sample used for laboratory analysis.
- Based on the collective data obtained during the soil corrosion investigation, the soil at the project site should be considered *very highly corrosive*. Buried reinforced concrete structures and iron and steel pipe will require corrosion protection.

5.0 RECOMMENDATIONS

V&A proposes the following recommendations for corrosion control.

5.1 Iron and Steel Pipe

1. Install a cathodic protection system.
2. Ensure electrical continuity of the pipeline.
3. Electrically isolate the pipeline from other metallic structures, such as other metallic pipes, reinforced concrete, or where a change in piping or coating material occurs.
4. Install corrosion test stations at each insulating joint, casing, and foreign pipeline crossing. Install monitoring test stations whenever required to limit spacing between test stations to no more than 800 feet.
5. Apply a bonded coating to the pipe.
6. If mortar coatings are used in addition to the bonded coating, follow the recommendations provided in Section 5.2.
7. Coat or wrap joints, valves, and any other steel appurtenances in metallic contact with the pipe to inhibit galvanic corrosion between dissimilar materials. The recommended coating or wrap will vary depending on the pipe material selected.
    a. For mortar coated pipe, apply a coat of cementitious mortar to maintain an environment similar to that of the pipe. Mortar coating can be performed by grouting the joints with a diaper, backfilling with a controlled low strength material (pH>10), or applying a cementitious mortar to the surfaces.
    b. For many other types of pipe, the appropriate method is wrapping with petrolatum wax tape. Wrap metallic valves and fittings with petrolatum wax tape per AWWA C217-04 and the manufacturer's instructions. Wax tape can be applied to conform tightly to irregular surfaces, such as nuts and bolts, or to irregular surface contours. The wax tape is impregnated with corrosion inhibitors to provide additional protection.

5.2 Buried Reinforced Concrete Piping and Structures

1. Buried reinforced concrete structures should be constructed of durable concrete such as described in ACI Standards 201.2R and 222R.
2. The water/cement ratio should not exceed 0.45.
3. The concrete cover applied over all steel reinforcement should be a minimum of 2 inches thick.
4. A bonded coating should be applied on top of the concrete cover to provide a barrier to the corrosive soil.
5. Type V modified cement should be used.
6. Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions and have a pH in the range of 6.5 to 8.0. Water used in concrete mixtures should be potable water.

5.3 Buried PVC or HDPE Pipe with Metallic Fittings

1. Buried PVC, HDPE, or other non-metallic pipe does not require corrosion protection; however, any metallic fitting or appurtenances associated with that piping does require corrosion protection.
2. Wrap metallic fittings with petrolatum wax tape per AWWA C217-04 and the manufacturer's instructions. Wax tape can be applied to conform tightly to irregular surfaces, such as nuts and bolts, or to irregular surface contours. The waxes impregnate the tape and contain corrosion inhibitors to provide additional protection. Using polyethylene encasement on the fittings is not as effective as using wax tape.
3. Install galvanic anodes to provide cathodic protection to every metallic fitting or appurtenance. Install test stations to monitor the cathodic protection system performance over the design life.

Appendix C

DRAFT

DRAFT: Revision Date: July 8, 2016

SILICON VALLEY CLEAN WATER
FRONT of PLANT SITE CIVIL OPINION OF PROBABLE COSTS

1 PHASE 1

1.01 Stabilization And Grading

	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
Preliminary Grading and Fabric Placement	Shift		Shifts	50.00	Shifts	50.00	Shifts	8	Hours
Lime Treatment Support	Shift		Shifts	50.00	Shifts	50.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Stabilization and Preliminary Grading															
1	Operator Foreman	L	400	MH	400	$ 90	$ 90	$ 36,000							$ 90	$ 36,000
4	Operator	L	1600	MH	1600	$ 80	$ 80	$ 128,000							$ 80	$ 128,000
4	Laborer	L	1600	MH	1600	$ 59	$ 59	$ 94,400							$ 59	$ 94,400
0.50	Laborer (Fabric @ .007 MH/SY)	L	200	MH	200	$ 59	$ 59	$ 11,800							$ 59	$ 11,800
1	Water Truck Driver	L	400	MH	400	$ 80	$ 80	$ 32,000							$ 80	$ 32,000
1	Front End Loader	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
1	Grader	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
1	Dozer	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
2	Sheepsfoot Roller	E	800	HR	800	$ 80			$ 80	$ 64,000					$ 80	$ 64,000
1	Excavator	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
1	Crew Truck	E	400	HR	400	$ 40			$ 40	$ 16,000					$ 40	$ 16,000
1	Water Truck	E	400	HR	400	$ 40			$ 40	$ 16,000					$ 40	$ 16,000
	Recycled Water from Plant															
2	Operator	L	800	MH	800	$ 80	$ 80	$ 64,000							$ 80	$ 64,000
1	Grader	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
1	Dozer w/Disc	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
	Fill for interim storm drain grading - excluding new roadway area	MS	37000	CY	37000						$ 10	$ 370,000	$ 15	$ 555,000	$ 25	$ 925,000
	Fill for new roadways (1.25' below finished grade)	MS	5400	CY	5400						$ 10	$ 54,000	$ 15	$ 81,000	$ 25	$ 135,000
	Reinforcing Fabric	M	255000	SF	255000						$ 0.50	$ 127,500			$ 0.50	$ 127,500
	Quote from White Cap w/10% overlap															
	Lime Treatment - 9% Lime & 18" Depth	S	228000	SF	228000								$ 2.00	$ 456,000	$ 2.00	$ 456,000
	Initial Sacrificial Lime Treatment	S	228000	SF	228000								$ 0.25	$ 57,000	$ 0.25	$ 57,000
	Mobilize/Demob Equipment															
	Excavator & Dozers	S	3	EA									$ 10,000	$ 30,000	$ 10,000	$ 30,000
	FEL, Rollers & Grader	S	5	EA									$ 5,000	$ 25,000	$ 5,000	$ 25,000
	Backhoe & Attachments	S	1	EA									$ 6,000	$ 6,000	$ 6,000	$ 6,000
			5000		**5000**	**$ 73.24**	**$**	**366,200**	**$**	**384,000**	**$**	**551,500**	**$**	**1,210,000**	**$**	**2,511,700**

1.02 Preliminary Utilities

		Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Interim SD System	Shift		Shifts	8.00	Shifts	8.00	Shifts	8	Hours
	Preliminary Utility Crossings	Shift		Shifts	15.00	Shifts	15.00	Shifts	8	Hours
	Lighting	Shift		Shifts	20.00	Shifts	20.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	Interim Storm Drain System															
1	Operator Foreman	L	64	MH	64	$ 90	$ 90	$ 5,760							$ 90	$ 5,760
1	Operator	L	64	MH	64	$ 80	$ 80	$ 5,120							$ 80	$ 5,120
2	Laborer	L	128	MH	128	$ 59	$ 59	$ 7,552							$ 59	$ 7,552
1	Excavator	E	64	HR	64	$ 120			$ 120	$ 7,680					$ 120	$ 7,680
1	Backhoe w/Compactor	E	64	HR	64	$ 120			$ 120	$ 7,680					$ 120	$ 7,680
1	Crew Truck	E	64	HR	64	$ 40			$ 40	$ 2,560					$ 40	$ 2,560
	SD Inlet	M	2	EA							$ 3,000	$ 6,000			$ 3,000	$ 6,000
	SD Piping - 18" PVC	M	350	LF							$ 25	$ 8,750			$ 25	$ 8,750
			256		**256**	**$ 72.00**		**$ 18,432**		**$ 17,920**		**$ 14,750**	**$ -**			**$ 51,102**
	Utility Crossings															
1	Operator Foreman	L	120	MH	120	$ 80	$ 80	$ 9,600							$ 80	$ 9,600
1	Operator	L	120	MH	120	$ 80	$ 80	$ 9,600							$ 80	$ 9,600
2	Laborer	L	240	MH	240	$ 59	$ 59	$ 14,160							$ 59	$ 14,160
1	Excavator	E	120	HR	120	$ 120			$ 120	$ 14,400					$ 120	$ 14,400
1	Backhoe w/Compactor	E	120	HR	120	$ 120			$ 120	$ 14,400					$ 120	$ 14,400
1	Crew Truck	E	120	HR	120	$ 40			$ 40	$ 4,800					$ 40	$ 4,800
	Casings crossing roadways	M	600	LF							$ 50	$ 30,000			$ 50	$ 30,000
			480		**480**	**$ 69.50**		**$ 33,360**		**$ 33,600**		**$ 30,000**	**$ -**			**$ 96,960**
	Lighting															
1	Operator Foreman	L	160	MH	160	$ 90	$ 90	$ 14,400							$ 90	$ 14,400
2	Laborer	L	320	MH	320	$ 59	$ 59	$ 18,880							$ 59	$ 18,880
1	Operator	L	160	MH	160	$ 80	$ 80	$ 12,800							$ 80	$ 12,800
2	Utility Man	L	320	MH	320	$ 62	$ 62	$ 19,840							$ 62	$ 19,840
2	Electricians	L	320	MH	320	$ 100	$ 100	$ 32,000							$ 100	$ 32,000
1	Excavator	E	160	HR	160	$ 120			$ 120	$ 19,200					$ 120	$ 19,200
1	Backhoe w/Compactor	E	160	HR	160	$ 120			$ 120	$ 19,200					$ 120	$ 19,200
1	Crew truck	E	160	HR	160	$ 40			$ 40	$ 6,400					$ 40	$ 6,400
	Lighting - Allowance	M	1	LS							$ 100,000	$ 100,000			$ 100,000	$ 100,000
			1280		**1280**	**$ 76.50**		**$ 97,920**		**$ 44,800**		**$ 100,000**	**$ -**			**$ 242,720**

1.03 Preliminary Paving

				Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Preliminary Paving			Shift		Shifts	15.00	Shifts	15.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Preliminary Paving on New Roadways - Quotation from O'Grady Paving															
	Asphalt Quantity		800	TON												
	3" AC - 53100 SF	S	53100	SF									$ 2.05	$ 108,855	$ 2	$ 108,855
	Aggregate Base Quantity		2200	TON												
	9" AB - 53100 SF	S	53100	SF									$ 1.75	$ 92,925	$ 2	$ 92,925
	Additional AC will be added in Phase 3															
			0		**0**			**$ -**		**$ -**		**$ -**		**$ 201,780**		**$ 201,780**

1.04 Concrete Work

				Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Concrete Curb along roadway and parking			Shift		Shifts	15.00	Shifts	15.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Concrete Curb															
0	Operator Foreman	L	0	MH		$ 90									$ -	$ -
1	Operator	L	120	MH	120	$ 80	$ 80	$ 9,600							$ 80	$ 9,600
1	Laborer Foreman	L	120	MH	120	$ 64	$ 64	$ 7,680							$ 64	$ 7,680
4	Laborer	L	480	MH	480	$ 59	$ 59	$ 28,320							$ 59	$ 28,320
1	Excavator	E	120	HR	120	$ 120			$ 120	$ 14,400					$ 120	$ 14,400
1	Crew truck	E	120	HR	120	$ 40			$ 40	$ 4,800					$ 40	$ 4,800
	Concrete Curb - 2CF/LF = 105YD @ $120/YD, $	M	1350	LF							$ 10	$ 13,500			$ 10	$ 13,500
	Forms	M	1350	LF							$ 5	$ 6,750			$ 5	$ 6,750
			720		**720**	**$ 63.33**		**$ 45,600**		**$ 19,200**		**$ 20,250**		**$ -**		**$ 85,050**

1.05 Construction Fencing & Sound Wall

				Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Construction Fencing & Sound Wall			Shift		Shifts	5.00	Shifts	5.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Construction Fencing															
1	Laborer Foreman	L	40	MH	40	$ 64	$ 64	$ 2,560							$ 64	$ 2,560
3	Laborer	L	120	MH	120	$ 59	$ 59	$ 7,080							$ 59	$ 7,080
1	Crew truck	E	40	HR	40	$ 40			$ 40	$ 1,600					$ 40	$ 1,600
	Fencing (Temporary, Purchased)	M	2500	LF							$ 15	$ 37,500			$ 15	$ 37,500
			160		**160**	**$ 60.25**		**$ 9,640**		**$ 1,600**		**$ 37,500**		**$ -**		**$ 48,740**
	Sound Wall - 980LF - Behrens & Associates Quote															
	Freight - Delivery	S	980	LF									$ 6	$ 5,440	$ 6	$ 5,440
	Installation	S	980	LS									$ 30	$ 29,400	$ 30	$ 29,400
	Purchase	S	980	LS									$ 233	$ 228,144	$ 233	$ 228,144
	Sales Tax	S	980	LS									$ 21	$ 20,533	$ 21	$ 20,533
	Buy-Back	S	980	LS									$ (35)	$ (34,222)	$ (35)	$ (34,222)
	Removal	S	980	LS									$ 28	$ 26,950	$ 28	$ 26,950
	Freight - Return	S	980	LS									$ 6	$ 5,440	$ 6	$ 5,440
	Structural Engineering / Calculations	S	980	LS									$ 5	$ 4,480	$ 5	$ 4,480
								$ -		**$ -**		**$ -**	$292	**$ 286,165**		**$ 286,165**
	SUBTOTALS		**7896**		**7896**			**$ 571,152**		**$ 501,120**		**$ 754,000**		**$ 1,697,945**		**$ 3,524,217**

2 PHASE 2

2.01 SD System

	Item Qty	Unit	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
SD Pump Station - Preassembled Structure			Shift		Shifts	20.00	Shifts	20.00	Shifts	8	Hours
SD Piping and Inlets			Shift		Shifts	25.00	Shifts	25.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	SD Pump Station															
0.5	Operator Foreman (Crane Operator)	L	80	MH	80	$ 90	$ 90	$ 7,200							$ 90	$ 7,200
1.00	Operator (2@0.25 + 1@0.5)	L	160	MH	160	$ 80	$ 80	$ 12,800							$ 80	$ 12,800
2.00	Laborers	L	320	MH	320	$ 80	$ 59	$ 18,880							$ 59	$ 18,880
2	Millwright	L	320	MH	320	$ 90	$ 90	$ 28,800							$ 90	$ 28,800
2	Electrician	L	320	MH	320	$ 110	$ 110	$ 35,200							$ 110	$ 35,200
0.25	Excavator	E	40	HR	40	$ 120			$ 120	$ 4,800					$ 120	$ 4,800
0.5	Front End Loader	E	80	HR	80	$ 120			$ 120	$ 9,600					$ 120	$ 9,600
0.25	Backhoe w/Compactor	E	40	HR	40	$ 120			$ 120	$ 4,800					$ 120	$ 4,800
0.5	Crane	E	80	HR	80	$ 120			$ 120	$ 9,600					$ 120	$ 9,600
1	Crew Truck	E	160	HR	160	$ 40			$ 40	$ 6,400					$ 40	$ 6,400
	SD Pump Station	M	1	LS							$ 500,000	$ 500,000			$ 500,000	$ 500,000
			1200		**1200**	**$ 85.73**		**$ 102,880**		**$ 35,200**		**$ 500,000**		**$ -**		**$ 638,080**
	SD System - Excluding Discharge Pipe															
1	Operator Foreman	L	200	MH	200	$ 90	$ 90	$ 18,000							$ 90	$ 18,000
3	Operator	L	600	MH	600	$ 59	$ 80	$ 48,000							$ 80	$ 48,000
8	Laborer	L	1600	MH	1600	$ 80	$ 59	$ 94,400							$ 59	$ 94,400
2	Excavator	E	400	HR	400	$ 120			$ 120	$ 48,000					$ 120	$ 48,000
1	Backhoe w/Compactor	E	200	HR	200	$ 120			$ 120	$ 24,000					$ 120	$ 24,000
1	Front End Loader	E	200	HR	200	$ 120			$ 120	$ 24,000					$ 120	$ 24,000
1	Crew Truck	E	200	HR	200	$ 40			$ 40	$ 8,000					$ 40	$ 8,000
	12" PVC	M	1700	LF							$ 15	$ 25,500			$ 15	$ 25,500
	15" PVC	M	900	LF							$ 20	$ 18,000			$ 20	$ 18,000
	18" PVC	M	1300	LF							$ 25	$ 32,500			$ 25	$ 32,500
	Inlets	M	25	EA							$ 3,000	$ 75,000			$ 3,000	$ 75,000
	Planter Allowance	S	1	LS									$ 150,000	$ 150,000	$ 150,000	$ 150,000
	Treatment Area Planter - **TBD**	M	0	EA											$ -	$ -
	Soil , planting and irrigation- **TBD**	M	0	SF											$ -	$ -
	Perforated pipe - **TBD**	M	0	LF											$ -	$ -
	Planter Inlets - **TBD**	M	0	EA											$ -	$ -
	Shoring Allowance	M	3900	LF							$ 2.00	$ 7,800			$ 2.00	$ 7,800
	Mobilize/Demob Equipment															
	Excavator	S	2	EA									$ 10,000	$ 20,000	$ 10,000	$ 20,000
	Front End Loader	S	1	EA									$ 5,000	$ 5,000	$ 5,000	$ 5,000
	Backhoe & Attachments	S	1	EA									$ 6,000	$ 6,000	$ 6,000	$ 6,000
			2400		**2400**	**$ 66.83**	**$ 160,400**		**$ 104,000**		**$ 158,800**		**$ 181,000**			**$ 604,200**

2.02 Overflow Pipe

		Item Qty	Unit	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Overflow Pipe - 3 Shifts for RCW crossing			Shift		Shifts	33.00	Shifts	33.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	Overflow Pipe															
1	Operator Foreman	L	264	MH	264	$ 90	$ 90	$ 23,760							$ 90	$ 23,760
1	Operator	L	264	MH	264	$ 80	$ 80	$ 21,120							$ 80	$ 21,120
6	Laborer	L	1584	MH	1584	$ 59	$ 59	$ 93,456							$ 59	$ 93,456
1	Excavator	E	264	HR	264	$ 120			$ 120	$ 31,680					$ 120	$ 31,680
1	Backhoe w/Compactor	E	264	HR	264	$ 120			$ 120	$ 31,680					$ 120	$ 31,680
1	Crew truck	E	264	HR	264	$ 40			$ 40	$ 10,560					$ 40	$ 10,560
1	Overflow Pipe - 36" PVC	M	875	LF							$ 40	$ 35,000			$ 40	$ 35,000
1	Return Pipe - 12" PVC	M	875	LF							$ 15	$ 13,125			$ 15	$ 13,125
1	Recycled Water Facility Offset	S	1	LS									$ 200,000	$ 200,000	$ 200,000	$ 200,000
	Shoring Allowance	M	875	LF							$ 10.00	$ 8,750			$ 10	$ 8,750
			2112		**2112**	**$ 65.50**		**$ 138,336**		**$ 73,920**		**$ 56,875**		**$ 200,000**		**$ 469,131**

2.03 Utilities

		Item Qty	Unit	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Utility Connections			Shift		Shifts	30.00	Shifts	30.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	Utility Connections															
1	Operator Foreman	L	240	MH	240	$ 90	$ 90	$ 21,600							$ 90	$ 21,600
1	Operator	L	240	MH	240	$ 80	$ 80	$ 19,200							$ 80	$ 19,200
2	Laborer	L	480	MH	480	$ 59	$ 59	$ 28,320							$ 59	$ 28,320
2	Utility Man	L	480	MH	480	$ 62	$ 62	$ 29,760							$ 62	$ 29,760
2	Electricians	L	480	MH	480	$ 100	$ 100	$ 48,000							$ 100	$ 48,000
1	Excavator	E	240	HR	240	$ 120			$ 120	$ 28,800					$ 120	$ 28,800
1	Backhoe w/Compactor	E	240	HR	240	$ 120			$ 120	$ 28,800					$ 120	$ 28,800
1	Crew Truck	E	240	HR	240	$ 40			$ 40	$ 9,600					$ 40	$ 9,600
	Utilities and connections - Allowance	M	1	LS							$ 200,000	$ 200,000			$ 200,000	$ 200,000
			1920		**1920**	**$ 76.50**		**$ 146,880**		**$ 67,200**		**$ 200,000**		**$ -**		**$ 414,080**
	SUBTOTALS				**7632**			**$ 548,496**		**$ 280,320**		**$ 915,675**		**$ 381,000.00**		**$ 2,125,491**

3 PHASE 3

3.01 Grading

	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
Grading	Shift		Shifts	8.00	Shifts	8.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	Final Grading - Uses soils already brought on site															
1	Operator Foreman	L	64	MH	64	$ 90	$ 90	$ 5,760							$ 90	$ 5,760
3	Operator	L	192	MH	192	$ 80	$ 80	$ 15,360							$ 80	$ 15,360
4	Laborer	L	256	MH	256	$ 59	$ 59	$ 15,104							$ 59	$ 15,104
1	Water Truck Driver	L	64	MH	64	$ 80	$ 80	$ 5,120							$ 80	$ 5,120
1	Front End Loader	E	64	HR	64	$ 120			$ 120	$ 7,680					$ 120	$ 7,680
1	Grader	E	64	HR	64	$ 120			$ 120	$ 7,680					$ 120	$ 7,680
1	Dozer	E	64	HR	64	$ 120			$ 120	$ 7,680					$ 120	$ 7,680
1	Sheepsfoot Roller	E	64	HR	64	$ 80			$ 80	$ 5,120					$ 80	$ 5,120
1	Crew Truck	E	64	HR	64	$ 40			$ 40	$ 2,560					$ 40	$ 2,560
1	Water Truck	E	64	HR	64	$ 40			$ 40	$ 2,560					$ 40	$ 2,560
	Note: Recycled Water from Plant															
2	Truck (15yd/truck)	S	128	HR	128	$ 120							$ 150	$ 19,200	$ 150	$ 19,200
	On-Site Conditioned Soil Material	S	3000	BCY									$ 5	$ 15,000	$ 5	$ 15,000
	Mobilize/Demob Equipment															
	Dozer	S	1	EA									$ 10,000	$ 10,000	$ 10,000	$ 10,000
	Front End Loader, Roller & Grader	S	3	EA									$ 5,000	$ 15,000	$ 5,000	$ 15,000
			576		**576**	**$ 71.78**		**$ 41,344**		**$ 33,280**		**$ -**		**$ 59,200**		**$ 133,824**

3.02 Final Paving

	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
Final AC layer for previously paved	Shift		Shifts	5.00	Shifts	5.00	Shifts	8	Hours
Full Paving	Shift		Shifts	32.00	Shifts	32.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Amount	Equipment (E) Unit Cost	Equipment (E) Amount	Materials (M) Unit Cost	Materials (M) Amount	Subcontractor (S) Unit Cost	Subcontractor (S) Amount	Total Unit Cost	Total Amount
	Final AC layer for paved areas done in Phase 1															
	Quotation from O'Grady Paving															
	Grinding of existing surface	S	53100	SF									$ 0.35	$ 18,585	$ 0.35	$ 18,585
	Asphalt Quantity		800	TON												
	3" AC layer on previously paved roadways during Phase 1 - 53100 SF	S	53100	SF									$ 2.05	$ 108,855	$ 2.05	$ 108,855
			0		**0**		**$ -**		**$ -**		**$ -**			**$ 127,440**		**$ 127,440**
	Full Paving															
	Quotation from O'Grady Paving															
	Asphalt Quantity		5200	TON												
	6" AC - Areas adjacent to new structures - 173900 SF	S	173900	SF									$ 3.75	$ 652,125	$ 3.75	$ 652,125
	Aggregate Base Quantity		7200	TON												
	9" AB - Areas adjacent to new structures - 173900 SF	S	173900	SF									$ 1.75	$ 304,325	$ 1.75	$ 304,325
			0		**0**		**$ -**		**$ -**		**$ -**			**$ 956,450**		**$ 956,450**

3.03 Concrete Work

		Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Concrete Curb	Shift		Shifts	6.00	Shifts	6.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Concrete Curb															
0	Operator Foreman	L	0	MH		$ 90									$ -	$ -
1	Operator	L	48	MH	48	$ 80	$ 80	$ 3,840							$ 80	$ 3,840
4	Laborer	L	192	MH	192	$ 59	$ 59	$ 11,328							$ 59	$ 11,328
1	Excavator	E	48	HR	48	$ 120			$ 120	$ 5,760					$ 120	$ 5,760
1	Crew Truck	E	48	HR	48	$ 40			$ 40	$ 1,920					$ 40	$ 1,920
	Concrete Curb	M	500	LF							$ 10	$ 5,000			$ 10	$ 5,000
	Form Materials	M	500	LF							$ 5	$ 2,500			$ 5	$ 2,500
			240		**240**	**$ 63.20**		**$ 15,168**		**$ 7,680**		**$ 7,500**		**$ -**		**$ 30,348**

3.04 Signage and Striping

		Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
	Signage	Shift		Shifts	3.00	Shifts	3.00	Shifts	8	Hours
	Striping	Shift		Shifts	3.00	Shifts	3.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Signage															
1	Laborer Foreman	L	24	MH	24	$ 64	$ 64	$ 1,536							$ 64	$ 1,536
2	Laborer	L	48	MH	48	$ 59	$ 59	$ 2,832							$ 59	$ 2,832
1	Crew Truck	E	24	HR	24	$ 40			$ 40	$ 960					$ 40	$ 960
	Signage	M	1	LS							$ 10,000	$ 10,000			$ 10,000	$ 10,000
			72		**72**	**$ 60.67**		**$ 4,368**		**$ 960**		**$ 10,000**		**$ -**		**$ 15,328**
	Striping															
1	Laborer Foreman	L	24	MH	24	$ 64	$ 64	$ 1,536							$ 64	$ 1,536
2	Laborer	L	48	MH	48	$ 59	$ 59	$ 2,832							$ 59	$ 2,832
1	Crew Truck	E	24	HR	24	$ 40			$ 40	$ 960					$ 40	$ 960
	Striping	M	1	LS							$ 2,000	$ 2,000			$ 2,000	$ 2,000
			72		**72**	**$ 60.67**		**$ 4,368**		**$ 960**		**$ 2,000**		**$ -**		**$ 7,328**

3.05 Frontage

	Item Qty	Unit	Unit	Prod. Time	Unit	Fixed Time	Unit	Total Duration	Unit	Shift Length	Unit
Frontage Wall			Shift		Shifts	15.00	Shifts	15.00	Shifts	8	Hours
Frontage Landscape			Shift		Shifts	10.00	Shifts	10.00	Shifts	8	Hours

#	Description		Qty	Unit	Man Hrs	Rate per Hr	Labor (L)		Equipment (E)		Materials (M)		Subcontractor (S)		Total	
							Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount
	Frontage Wall															
1	Operator Foreman	L	120	MH	120	$ 90	$ 90	$ 10,800							$ 90	$ 10,800
1	Crane Operator	L	120	MH	120	$ 86	$ 86	$ 10,320							$ 86	$ 10,320
1	Operator	L	120	MH	120	$ 80	$ 80	$ 9,600							$ 80	$ 9,600
2	Laborer	L	240	MH	240	$ 59	$ 59	$ 14,160							$ 59	$ 14,160
0.5	Excavator	E	60	HR	60	$ 120			$ 120	$ 7,200					$ 120	$ 7,200
0.5	Front End Loader	E	60	HR	60	$ 120			$ 120	$ 7,200					$ 120	$ 7,200
1	Crane	E	120	HR	120	$ 120			$ 120	$ 14,400					$ 120	$ 14,400
1	Backhoe w/Auger	E	120	HR	120	$ 120			$ 120	$ 14,400					$ 120	$ 14,400
1	Crew Truck	E	120	HR	120	$ 40			$ 40	$ 4,800					$ 40	$ 4,800
1	Precast Frontage Wall	M	650	LF							$ 300	$ 195,000			$ 300	$ 195,000
1	Post Concrete	M	30	CY							$ 120	$ 3,600			$ 120	$ 3,600
			600		**600**	**$ 74.80**		**$ 44,880**		**$ 48,000**		**$ 198,600**	**$**	**-**		**$ 291,480**
	Frontage Landscape															
1	Operator Foreman	L	80	MH	80	$ 90	$ 90	$ 7,200							$ 90	$ 7,200
1	Operator	L	80	MH	80	$ 80	$ 80	$ 6,400							$ 80	$ 6,400
4	Laborer	L	320	MH	320	$ 59	$ 59	$ 18,880							$ 59	$ 18,880
1	Excavator	E	80	HR	80	$ 120			$ 120	$ 9,600					$ 120	$ 9,600
1	Front End Loader	E	80	HR	80	$ 120			$ 120	$ 9,600					$ 120	$ 9,600
1	Crew Truck	E	80	HR	80	$ 40			$ 40	$ 3,200					$ 40	$ 3,200
1	Frontage Landscape - Trees	M	25	EA							$ 1,500	$ 37,500			$ 1,500	$ 37,500
			480		**480**	**$ 67.67**		**$ 32,480**		**$ 22,400**		**$ 37,500**	**$**	**-**		**$ 92,380**
	SUBTOTALS				**2040**			**$ 142,608**		**$ 113,280**		**$ 255,600**	**$**	**1,143,090**		**$ 1,654,578**

SUMMARY - ALL PHASES

Summary of Operations - Direct Costs - All Phases

Phase	Operation Description	Quantity	Equip Hrs	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Cost	Equipment (E) Unit Cost	Equipment (E) Cost	Materials (M) Unit Cost	Materials (M) Cost	Subcontractor (S) Unit Cost	Subcontractor (S) Cost	Total Unit Cost	Total
1	Stabilization and Preliminary Grading		4000	5000	$ 73.24	$ 366,200		$ 384,000		$ 551,500		$ 1,210,000		$	$ 2,511,700
1	Interim Storm Drain System		192	256	$ 72.00	$ 18,432		$ 17,920		$ 14,750		$ -		$	$ 51,102
1	Utility Crossings		360	480	$ 69.50	$ 33,360		$ 33,600		$ 30,000		$ -		$	$ 96,960
1	Lighting		480	1280	$ 76.50	$ 97,920		$ 44,800		$ 100,000		$ -		$	$ 242,720
1	Preliminary Paving on New Roadways - Quotation from O'Grady Paving		0	0	$ -	$ -		$ -		$ -		$ 201,780		$	$ 201,780
1	Concrete Curb		240	720	$ 63.33	$ 45,600		$ 19,200		$ 20,250		$ -		$	$ 85,050
1	Construction Fencing		40	160	$ 60.25	$ 9,640		$ 1,600		$ 37,500		$ -		$	$ 48,740
1	Sound Wall - 980LF - Behrens & Associates Quote		0	0	$ -	$ -		$ -		$ -		$ 286,165		$	$ 286,165
2	SD Pump Station		400	1200	$ 85.73	$ 102,880		$ 35,200		$ 500,000		$ -		$	$ 638,080
2	SD System - Excluding Discharge Pipe		1000	2400	$ 66.83	$ 160,400		$ 104,000		$ 158,800		$ 181,000		$	$ 604,200
2	Overflow Pipe		792	2112	$ 65.50	$ 138,336		$ 73,920		$ 56,875		$ 200,000		$	$ 469,131
2	Utility Connections		720	1920	$ 76.50	$ 146,880		$ 67,200		$ 200,000		$ -		$	$ 414,080
3	Final Grading - Uses soils already brought on site		512	576	$ 71.78	$ 41,344		$ 33,280		$ -		$ 59,200		$	$ 133,824
3	Final AC layer for paved areas done in Phase 1		0	0		$ -		$ -		$ -		$ 127,440		$	$ 127,440
3	Full Paving		0	0		$ -		$ -		$ -		$ 956,450		$	$ 956,450
3	Concrete Curb		96	240	$ 63.20	$ 15,168		$ 7,680		$ 7,500		$ -		$	$ 30,348
3	Signage		24	72	$ 60.67	$ 4,368		$ 960		$ 10,000		$ -		$	$ 15,328
3	Striping		24	72	$ 60.67	$ 4,368		$ 960		$ 2,000		$ -		$	$ 7,328
3	Frontage Wall		480	600	$ 74.80	$ 44,880		$ 48,000		$ 198,600		$ -		$	$ 291,480
3	Frontage Landscape		240	480	$ 67.67	$ 32,480		$ 22,400		$ 37,500		$ -		$	$ 92,380
	SUBTOTALS		**9600**	**17568**	**$ 71.85**	**$ 1,262,256**		**$ 894,720**		**$ 1,925,275**		**$ 3,222,035**		**$**	**$ 7,304,286**
ST	Sales Tax on Materials	$ 1,925,275	Matl $$$							9.00%	$ 173,275				173,275
ST&S	Small Tool & Supplies	$ 1,262,256	Lab $$$							5.00%	$ 63,113				63,113
SS	Safety Supplies	17568	Man Hrs						$	3.67	$ 64,475				64,475
M&D	Mobil & Demob Not in Direct Costs	$ 7,304,286	Oper $$$									0.55%	$ 40,174		40,174
	TOTAL DIRECT COSTS			**17568**		**$ 1,262,256**		**$ 894,720**		**$ 2,226,137**		**$ 3,262,209**		**$**	**$ 7,645,322**
IFC	Indirect Field Costs	$ 7,645,322												**10.00%**	**$ 764,532**
HO&P	Home Office Costs & Profit	$ 7,645,322												**15.00%**	**$ 1,146,798**
	SUBTOTAL Indirect, Home office & Profit													**25.00%**	**$ 1,911,331**
	TOTAL DIRECT AND MARKUP COSTS														**$ 9,556,653**
B&I	Bonds and Insurance	$ 9,556,653												2.00%	**$ 191,133**
	SUBTOTAL														**$ 9,747,786**
BR	Builders Risk	$ 9,747,786												1.00%	**$ 97,478**
	SUBTOTAL														**$ 9,845,263**
CGL	CGL Insurance	$ 9,845,263												1.50%	**$ 147,679**
	SUBTOTAL														**$ 9,992,942**
	GRAND TOTAL BID COSTS												**MARKUP %**	**30.7%**	**$ 9,992,942**
	OPINION OF PROBABLE COST												**ALL PHASES**		**$ 9,993,000**

SUMMARY - BY PHASE

Summary of Operations - Direct Costs - Phase 1

Phase	Operation Description	Quantity	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Cost	Equipment (E) Unit Cost	Equipment (E) Cost	Materials (M) Unit Cost	Materials (M) Cost	Subcontractor (S) Unit Cost	Subcontractor (S) Cost	Total Unit Cost	Total
1	Stabilization and Preliminary Grading			5000	$ 73.24		$ 366,200		$ 384,000	$ -	$ 551,500	$ -	$ 1,210,000	$ -	$ 2,511,700
1	Interim Storm Drain System			256	$ 72.00		$ 18,432		$ 17,920		$ 14,750		$ -		$ 51,102
1	Utility Crossings			480	$ 69.50		$ 33,360		$ 33,600		$ 30,000		$ -		$ 96,960
1	Lighting			1280	$ 76.50		$ 97,920		$ 44,800		$ 100,000		$ -		$ 242,720
1	Preliminary Paving on Roadways			0			$ -		$ -		$ -		$ 201,780		$ 201,780
1	Concrete Curb			720	$ 63.33		$ 45,600		$ 19,200		$ 20,250		$ -		$ 85,050
1	Construction Fencing			160	$ 60.25		$ 9,640		$ 1,600		$ 37,500		$ -		$ 48,740
1	Sound Wall - 980LF - Behrens & Associates Quote			0	$ -		$ -		$ -		$ -		$ 286,165		$ 286,165
SUBTOTALS				**7896**	**$ 72.33**		**$ 571,152**		**$ 501,120**		**$ 754,000**		**$ 1,697,945**		**$ 3,524,217**
ST	Sales Tax on Materials	$ 754,000	Matl $$$							9.00%	$ 67,860				**67,860**
ST&S	Small Tool & Supplies	$ 571,152	Lab $$$							5.00%	$ 28,558				**28,558**
SS	Safety Supplies	7896	Man Hrs							$ 3.67	$ 28,978				**28,978**
M&D	Mobil & Demob Not in Direct Costs	$ 3,524,217	Oper $$$									0.55%	$ 19,383		**19,383**
	TOTAL DIRECT COSTS			**7896**			**$ 571,152**		**$ 501,120**		**$ 879,396**		**$ 1,717,329**		**$ 3,668,996**
IFC	Indirect Field Costs	$ 3,668,996												**10.00%**	**$ 366,900**
HO&P	Home Office Costs & Profit	$ 3,668,996												**15.00%**	**$ 550,349**
	SUBTOTAL Indirect, Home office & Profit													**25.00%**	**$ 917,249**
	TOTAL DIRECT AND MARKUP COSTS														**$ 4,586,246**
B&I	Bonds and Insurance	$ 4,586,246												2.00%	**$ 91,725**
	SUBTOTAL														**$ 4,677,971**
BR	Builders Risk	$ 4,677,971												1.00%	**$ 46,780**
	SUBTOTAL														**$ 4,724,750**
CGL	CGL Insurance	$ 4,724,750												1.50%	**$ 70,871**
	SUBTOTAL														**$ 4,795,621**
	GRAND TOTAL BID COSTS													**MARKUP %**	**30.7% $ 4,795,621**
	OPINION OF PROBABLE COST - PHASE 1													**PHASE 1 %**	**48.0% $ 4,796,000**

Summary of Operations - Direct Costs - Phase 2

Phase	Operation Description	Quantity	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Cost	Equipment (E) Unit Cost	Equipment (E) Cost	Materials (M) Unit Cost	Materials (M) Cost	Subcontractor (S) Unit Cost	Subcontractor (S) Cost	Total Unit Cost	Total
2	SD Pump Station			1200	$ 71.17		$ 102,880		$ 35,200		$ 500,000		$ -		$ 638,080
2	SD System - Excluding Discharge Pipe			2400	$ 71.17		$ 160,400		$ 104,000		$ 158,800		$ 181,000		$ 604,200
2	Overflow Pipe			2112	$ 65.50		$ 138,336		$ 73,920		$ 56,875		$ 200,000		$ 469,131
2	Utility Connections			1920	$ 73.14		$ 146,880		$ 67,200		$ 200,000		$ -		$ 414,080
SUBTOTALS				**7632**	**$ 71.87**		**$ 548,496**		**$ 280,320**		**$ 915,675**		**$ 381,000**		**$ 2,125,491**
ST	Sales Tax on Materials	$ 915,675	Matl $$$							9.00%	$ 82,411				**82,411**
ST&S	Small Tool & Supplies	$ 548,496	Lab $$$							5.00%	$ 27,425				**27,425**
SS	Safety Supplies	7632	Man Hrs							$ 3.67	$ 28,009				**28,009**
M&D	Mobil & Demob Not in Direct Costs	$ 2,125,491	Oper $$$									0.55%	$ 11,690		**11,690**
	TOTAL DIRECT COSTS			**7632**			**$ 548,496**		**$ 280,320**		**$ 1,053,520**		**$ 392,690**		**$ 2,275,026**

IFC	Indirect Field Costs	$	2,275,026													**10.00%**	**$**	**227,503**
HO&P	Home Office Costs & Profit	$	2,275,026													**15.00%**	**$**	**341,254**
	SUBTOTAL Indirect, Home office & Profit															**25.00%**	**$**	**568,757**
	TOTAL DIRECT AND MARKUP COSTS																**$**	**2,843,783**
B&I	Bonds and Insurance	$	2,843,783													2.00%	**$**	**56,876**
	SUBTOTAL																**$**	**2,900,658**
BR	Builders Risk	$	2,900,658													1.00%	**$**	**29,007**
	SUBTOTAL																**$**	**2,929,665**
CGL	CGL Insurance	$	2,929,665													1.50%	**$**	**43,945**
	SUBTOTAL																**$**	**2,973,610**
	GRAND TOTAL BID COSTS														**MARKUP %**	**30.7%**	**$**	**2,973,610**
	OPINION OF PROBABLE COST - PHASE 2														**PHASE 2 %**	**29.8%**	**$**	**2,973,000**

Summary of Operations - Direct Costs - Phase 3

Phase	Operation Description	Quantity	Unit	Man Hrs	Rate per Hr	Labor (L) Unit Cost	Labor (L) Cost	Equipment (E) Unit Cost	Equipment (E) Cost	Materials (M) Unit Cost	Materials (M) Cost	Subcontractor (S) Unit Cost	Subcontractor (S) Cost	Total Unit Cost	Total
3	Final Grading - Uses soils already brought on site			**576**	$ 70.75	**$**	**41,344**	**$**	**33,280**	**$**	**-**	**$**	**59,200**	**$**	**133,824**
3	Final AC layer for paved areas done in phase 1			**0**		**$**	**-**	**$**	**-**	**$**	**-**	**$**	**127,440**	**$**	**127,440**
3	Full Paving			**0**		**$**	**-**	**$**	**-**	**$**	**-**	**$**	**956,450**	**$**	**956,450**
3	Concrete Curb			**240**	$ 72.00	**$**	**15,168**	**$**	**7,680**	**$**	**7,500**	**$**	**-**	**$**	**30,348**
3	Signage			**72**	$ 60.67	**$**	**4,368**	**$**	**960**	**$**	**10,000**	**$**	**-**	**$**	**15,328**
3	Striping			**72**	$ 60.67	**$**	**4,368**	**$**	**960**	**$**	**2,000**	**$**	**-**	**$**	**7,328**
3	Frontage Wall			**600**	$ 74.80	**$**	**44,880**	**$**	**48,000**	**$**	**198,600**	**$**	**-**	**$**	**291,480**
3	Frontage Landscape			**480**	$ 72.00	**$**	**32,480**	**$**	**22,400**	**$**	**37,500**	**$**	**-**	**$**	**92,380**
SUBTOTALS				**2040**	**$ 69.91**	**$**	**142,608**	**$**	**113,280**	**$**	**255,600**	**$**	**1,143,090**	**$**	**1,654,578**
ST	Sales Tax on Materials	$	255,600	Matl $$$						9.00%	$ 23,004				**23,004**
ST&S	Small Tool & Supplies	$	142,608	Lab $$$						5.00%	$ 7,130				**7,130**
SS	Safety Supplies		2040	Man Hrs					$ 3.67	$	7,487				**7,487**
M&D	Mobil & Demob Not in Direct Costs	$	1,654,578	Oper $$$								0.55%	$ 9,100		**9,100**
	TOTAL DIRECT COSTS			**2040**		**$**	**142,608**	**$**	**113,280**	**$**	**293,221**	**$**	**1,152,190**	**$**	**1,701,299**
IFC	Indirect Field Costs	$	1,701,299											**10.00%**	**$ 170,130**
HO&P	Home Office Costs & Profit	$	1,701,299											**15.00%**	**$ 255,195**
	SUBTOTAL Indirect, Home office & Profit													**25.00%**	**$ 425,325**
	TOTAL DIRECT AND MARKUP COSTS														**$ 2,126,624**
B&I	Bonds and Insurance	$	2,126,624											2.00%	**$ 42,532**
	SUBTOTAL														**$ 2,169,157**
BR	Builders Risk	$	2,169,157											1.00%	**$ 21,692**
	SUBTOTAL														**$ 2,190,848**
CGL	CGL Insurance	$	2,190,848											1.50%	**$ 32,863**
	SUBTOTAL														**$ 2,223,711**
	GRAND TOTAL BID COSTS													**MARKUP %**	**30.7% $ 2,223,711**
	OPINION OF PROBABLE COST - PHASE 3													**PHASE 3 %**	**22.3% $ 2,224,000**
	CONSOLIDATED OPINION OF PROBABLE COST													**ALL PHASES**	**100.0% $ 9,993,000**

Appendix D

Phase 1

The following calculations were prepared inorder to analyze the Life Cycle Costs (LCC). In order to calculate the LCC, the following assumptions we taken:

Construction Cost Components:

Site Stabilization	Construction Fencing
Grading	Lighting
Preliminary Paving	Interim Storm Drainage
Utilities	

Mark Ups

None

Midpoint year construction 2017

Year of Construction Completion 2017

O&M Costs

1) Fence maintanence
2) Lighting maintanence

Rehabilitation Costs

1) Light bulb replacement

Escalation and Discount Rates

1) None

A. Purpose: This sheet provides the LCC calculation for a 50 year analysis period for the Front of Plant Civil Improvements related to Phase 1

Inputed data highlighted in yellow

B. Step 1: Conversion from Construction Cost to Capital Cost

Equation 3.1 is used to convert construction cost into capital cost. Contingency, soft cost and market fluctuation cost factors are displayed below.

Capital Cost = Construction Cost x (1 + Project Contingency + Σ(Soft Costs) + Market Fluctuations) [EQ 3.1]

1. Project Contingency:	Cont=	25%
2. Soft Costs (SC)		
Construction Management and Engineering Servies for Pipeline Projects	SC_{cm}=	15%
Contract Change Orders	SC_{cco}=	5%
Planning	SC_{plan}=	5%
Design	SC_{Design}=	10%
Project Management	SC_{PM}=	5%
3. Market Fluctuation (MF)		
	MF_{low}=	-5%
	MF_{base}=	0%
	MF_{high}=	15%

4. Capital Cost, CC

The construction Cost for Phase 1 Site Civil Improvements is $5,252,000

Display Unit of Dollars Dollars = $1.00

Cost $_{Construction}$= $5,252,000.00 Note: Estimate is from May 2016

Cost $_{Capital\_low}$= $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{low}) = $8,403,200.00

Cost $_{Capital\_base}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{base}) = $8,665,800.00

Cost $_{Capital\_high}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{high}) = $9,453,600.00

$Y_{capital}$ = Midpoint year of Construction = 2017

C. Step 2: Calculate Operation and Maintenance (O&M) Costs:

Assumptions Made:

Fence and Lights will not be inspected, but only repaired if noticed by staff

D. Step 3: Calculate Rehabilitation and Replacement Costs

The anticipated design life for fencing is 50 years: thus, no rehabilitation or replacement costs need to be calculated for the fencing since the design life occurs outside of the analysis window of 50 years.

The anticipated design life for lighting is 30 years: therefore there will be one rehabilitation for lighting during the analysis period

Replacement Costs for lighting	$50,000.00
Planned replacements	1
$Cost_{Rehab}$	$50,000.00

E. Step 4: Calculate the Future Value of All Costs

Current Year = $Y_{current}$ =	2016
Escalation = i =	4%

Calculate future values, FV using EQ 4-1:

$FV = PV \times (1+i)^{Yn-Ycurrent}$ where Y_n is the year the cost occurs and PV = present value

$FV_{capital\_low} = Cost_{Capital\_low} (1 + i)^{Ycapital-Ycurrent}$ =	$8,739,328.00
$FV_{capital\_base} = Cost_{Capital\_base} (1 + i)^{Ycapital-Ycurrent}$ =	$9,012,432.00
$FV_{capital\_high} = Cost_{Capital\_high} (1 + i)^{Ycapital-Ycurrent}$ =	$9,831,744.00

F. Step 5: Calculate Present Value at Year of Beneficial Use

Year of Beneficial Use, Y_{BFU}:	Y_{BFU} =	2017
Discount Rate for O&M, r_{OM}:	r_{OM} =	3%
Discount Rate for Capital and Rehab/Replace, $r_{capital}$:	$r_{capital}$ =	7%

Calculate Present Values for all Years above Year of Beneficial Use (Using EQ 4-2)

$Z = FV \times (1 + r)^{(Y_{BFU} - Y_{current})}$

Z is the cost at the Year of Beneficial Use and FV is the future value calculated in Step 4

For all costs occuring before Year of Beneficial Use, assume these costs are sunk costs in the year it occurs. Therefore, the future value as calculated in Step 4 will be used.

$Z_{capital\_low} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_low}, FV_{capital\_low}(1 + r_{capital})^{-(Ycapital - YBFU)}]$	$8,739,328.00
$Z_{capital\_base} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_base}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$	$9,012,432.00
$Z_{capital\_high} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_high}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$	$9,831,744.00

G. Step 6: Calculate the Total Cost for the Year of Beneficial Use by Summing the Adjusted Values in Step 5.

Ztotal_low = Zcapital_low + $Cost_{Rebab}$ =	$8,789,328.00
Ztotal_base = Zcapital_base + $Cost_{Rebab}$ =	$9,062,432.00
Ztotal_high = Zcapital_high + $Cost_{Rebab}$ =	$9,881,744.00

Phase 2

The following calculations were prepared inorder to analyze the Life Cycle Costs (LCC). In order to calculate the LCC, the following assumptions we taken:

Construction Cost Components:

Storm Drain Pump Station
SD Discharge Pipe
Overflow Pipe
Utility Connections

Mark Ups

None

Midpoint year construction 2019

Year of Construction Completion 2020

O&M Costs

1) SD Inlet cleaning and maintenance

Rehabilitation Costs

1) Pump Replacements

Escalation and Discount Rates

1) None

A. Purpose: This sheet provides the LCC calculation for a 50 year analysis period for the Front of Plant Civil Improvements related to Phase 2

Inputed data highlighted in yellow

B. Step 1: Conversion from Construction Cost to Capital Cost

Equation 3.1 is used to convert construction cost into capital cost. Contingency, soft cost and market fluctuation cost factors are displayed below.

Capital Cost = Construction Cost x (1 + Project Contingency + Σ(Soft Costs) + Market Fluctuations) [EQ 3.1]

1. Project Contingency:	Cont=	25%
2. Soft Costs (SC)		
Construction Management and Engineering Servies for Pipeline Projects	SC_{cm}=	15%
Contract Change Orders	SC_{cco}=	5%
Planning	SC_{plan}=	5%
Design	SC_{Design}=	10%
Project Management	SC_{PM}=	5%
3. Market Fluctuation (MF)		
	MF_{low}=	-5%
	MF_{base}=	0%
	MF_{high}=	15%

4. Capital Cost, CC

The construction Cost for Phase 2 Site Civil Improvements is $6,189,000.00

Display Unit of Dollars — Dollars = $1.00

Cost $_{Construction}$= $6,189,000.00 Note: Estimate is from May 2016

Cost $_{Capital\_low}$= $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{low}) = $9,902,400.00

Cost $_{Capital\_base}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{base}) = $10,211,850.00

Cost $_{Capital\_high}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{high}) = $11,140,200.00

$Y_{capital}$ = Midpoint year of Construction = 2019

C. Step 2: Calculate Operation and Maintenance (O&M) Costs:

Assumptions Made:

- SVCW will be maintaining the SDPS
- SVCW will have purchased an extra pump for the shelf
- SVCW will be providing cleaning on the stormdrain

1. Storm Drain Cleaning

Construction Finish Year, $Y_{EndConst}$ =	2019
Cleaning Cost, $Cost_{Unit\_inspect}$ =	$5000/year
Cleaning years, $Cost_{clean}$	50

Annual Cost for pipe inspections is calculated as follows:

Cost $_{Annual\_Inspect}$= $Cost_{Unit\_Inspect}$= $5000/year

Cleaning occurs every year under a 50 yr cycle; therefore, inspections occur for 50 years

Y_{OM_1} = 2020

D. Step 3: Calculate Rehabilitation and Replacement Costs

The anticipated design life for piping is 50 years, thus, no rehabilitation or replacement costs need to be calculated. The anticipated design life for new pumps is 30 years: therefore there will be one rehabilitation for pumps during the analysis period.

Replacement Costs per pump (product and installation):	25000
Planned Replacements	4
$Cost_{Rehab}$ = Cost per pump*replacents	$100,000.00

E. Step 4: Calculate the Future Value of All Costs

Current Year = $Y_{current}$ =	2016
Escalation = i =	4%

Calculate future values, FV using EQ 4-1:

$FV = PV \times (1+i)^{Yn-Ycurrent}$ where Y_n is the year the cost occurs and PV = present value

$FV_{capital\_low} = Cost_{Capital\_low}(1+i)^{Ycapital-Ycurrent}$ =	$11,138,853.27
$FV_{capital\_base} = Cost_{Capital\_base}(1+i)^{Ycapital-Ycurrent}$ =	$11,486,942.44
$FV_{capital\_high} = Cost_{Capital\_high}(1+i)^{Ycapital-Ycurrent}$ =	$12,531,209.93
$FV_{OM\_1} = [Cost_{Annual\_inspect}*(1+i)^{Y_{OM\_1}-Y_{current}}]$ =	$608.33
$FV_{OM\_2} = [Cost_{Annual\_inspect}*(1+i)^{Y_{OM\_2}-Y_{current}}]$ =	$632.66
$FV_{OM\_3} = [Cost_{Annual\_inspect}*(1+i)^{Y_{OM\_3}-Y_{current}}]$ =	$657.97
$FV_{OM\_4} = [Cost_{Annual\_inspect}*(1+i)^{Y_{OM\_4}-Y_{current}}]$ =	$684.28
FVOM_5	$711.66
FVOM_6	$740.12
FVOM_7	$769.73
FVOM_8	$800.52
FVOM_9	$832.54
FVOM_10	$865.84
FVOM_11	$900.47
FVOM_12	$936.49
FVOM_13	$973.95
FVOM_14	$1,012.91
FVOM_15	$1,053.42
FVOM_16	$1,095.56
FVOM_17	$1,139.38
FVOM_18	$1,184.96
FVOM_19	$1,232.36
FVOM_20	$1,281.65
FVOM_21	$1,332.92
FVOM_22	$1,386.23
FVOM_23	$1,441.68
FVOM_24	$1,499.35
FVOM_25	$1,559.33
FVOM_26	$1,621.70
FVOM_27	$1,686.57
FVOM_28	$1,754.03
FVOM_29	$1,824.19
FVOM_30	$1,897.16
FVOM_31	$1,973.04
FVOM_32	$2,051.97

FVOM_33	$2,134.04
FVOM_34	$2,219.41
FVOM_35	$2,308.18
FVOM_36	$2,400.51
FVOM_37	$2,496.53
FVOM_38	$2,596.39
FVOM_39	$2,700.25
FVOM_40	$2,808.26
FVOM_41	$2,920.59
FVOM_42	$3,037.41
FVOM_43	$3,158.91
FVOM_44	$3,285.26
FVOM_45	$3,416.67
FVOM_46	$3,553.34
FVOM_47	$3,695.48
FVOM_48	$3,843.29
FVOM_49	$3,997.03
FVOM_50	$4,156.91

F. Step 5: Calculate Present Value at Year of Beneficial Use

Year of Beneficial Use, Y_{BFU}: Y_{BFU} = 2020

Discount Rate for O&M, r_{OM}: r_{OM} = 3%

Discount Rate for Capital and Rehab/Replace, $r_{capital}$: $r_{capital}$ = 7%

Calculate Present Values for all Years above Year of Beneficial Use (Using EQ 4-2)

$Z = FV \times (1 + r)^{(Y_{BFU} - Y_{current})}$

Z is the cost at the Year of Beneficial Use and FV is the future value calculated in Step 4

For all costs occuring before Year of Beneficial Use, assume these costs are sunk costs in the year it occurs. Therefore, the future value as calculated in Step 4 will be used.

$Z_{capital\_low} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_low}, FV_{capital\_low}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $11,918,573.00

$Z_{capital\_base} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_base}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $12,291,028.41

$Z_{capital\_high} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_high}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $13,408,394.63

$Z_{OM\_Total} = sum[FV_{OM\_n} * (1 + r_{OM})^{-(Y_{OM\_n} - Y_{BFU})}] =$ $92,871.43

G. Step 6: Calculate the Total Cost for the Year of Beneficial Use by Summing the Adjusted Values in Step 5.

Ztotal_low = Zcapital_low + ZOM_total + $Cost_{Rehab}$= $12,111,444.43

Ztotal_base = Zcapital_base + ZOM_total + $Cost_{Rehab}$= $12,483,899.83

Ztotal_high = Zcapital_high + ZOM_total + $Cost_{Rehab}$= $13,601,266.05

PHASE 3

The following calculations were prepared inorder to analyze the Life Cycle Costs (LCC). In order to calculate the LCC, the following assumptions we taken:

Construction Cost Components:

Final Grading	Landscaping
Paving	Frontage Wall
Concrete Curbs	
Signage and Striping	

Mark Ups

Midpoint year construction 2021

Year of Construction Completion 2021

O&M Costs

1) Landscaping

Rehabilitation Costs

1) None

Escalation and Discount Rates

1) None

A. Purpose: This sheet provides the LCC calculation for a 50 year analysis period for the Front of Plant Civil Improvements related to Phase 3

Inputed data highlighted in yellow

B. Step 1: Conversion from Construction Cost to Capital Cost

Equation 3.1 is used to convert construction cost into capital cost. Contingency, soft cost and market fluctuation cost factors are displayed below.

Capital Cost = Construction Cost x (1 + Project Contingency + Σ(Soft Costs) + Market Fluctuations) [EQ 3.1]

1. Project Contingency:	Cont=	25%
2. Soft Costs (SC)		
Construction Management and Engineering Servies for Pipeline Projects	SC_{cm}=	15%
Contract Change Orders	SC_{cco}=	5%
Planning	SC_{plan}=	5%
Design	SC_{Design}=	10%
Project Management	SC_{PM}=	5%
3. Market Fluctuation (MF)		
	MF_{low}=	-5%
	MF_{base}=	0%
	MF_{high}=	15%

4. Capital Cost, CC

The construction Cost for Phase 3 Site Civil Improvements is $4,345,000

Display Unit of Dollars — Dollars = 1

Cost $_{Construction}$= $4,345,000.00 Note: Estimate is from May 2016

Cost $_{Capital\_low}$= $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{low}) = $6,952,000.00

Cost $_{Capital\_base}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{base}) = $7,169,250.00

Cost $_{Capital\_high}$ = $Cost_{construction}$ *(1+ Cont + SC_{CM} + SC_{CCO} + SC_{Plan} + SC_{Design} + SC_{PM} + MF_{high}) = $7,821,000.00

$Y_{capital}$ = Midpoint year of Construction = 2021

C. Step 2: Calculate Operation and Maintenance (O&M) Costs:

Assumptions Made:

SVCW will be performing maintenance on landscaped areas

1. Landscape Maintenance

Construction Finish Year, $Y_{EndConst}$ =	2021
Landscape Cost, $Cost_{Unit\_landscape}$=	$12000/yr
Maintenance per year	1

Annual Cost for pipe inspections is calculated as follows:

Cost $_{maintenance}$= maintenance per*$Cost_{Unit\_Inspect}$= $12,000.00

Inspection occurs every year under a 50 yr cycle

D. Step 3: Calculate Rehabilitation and Replacement Costs

The anticipated design life for phase 3 is 50 years, but with the exception of landscape which has a design life of 30 years: thus, the landscape will need to be replaced once during the analysis period.

Replacement Costs for lighting	$ 50,000.00
Planned Replacements	1
$Cost_{Rehab}$	$ 50,000.00

E. Step 4: Calculate the Future Value of All Costs

Current Year = $Y_{current}$ =	2016
Escalation = i =	4%

Calculate future values, FV using EQ 4-1:

$FV = PV \times (1+i)^{Yn-Ycurrent}$ where Y_n is the year the cost occurs and PV = present value

$FV_{capital\_low} = Cost_{Capital\_low}(1+i)^{Ycapital-Ycurrent}$ =	$8,458,170.98
$FV_{capital\_base} = Cost_{Capital\_base}(1+i)^{Ycapital-Ycurrent}$ =	$8,722,488.82
$FV_{capital\_high} = Cost_{Capital\_high}(1+i)^{Ycapital-Ycurrent}$ =	$9,515,442.35
$FV_{OM\_1} = [Cost_{Annual\_landscape}*(1+i)^{Y_{OM\_1}-Y_{current}}]$ =	$12,480.00
$FV_{OM\_2} = [Cost_{Annual\_landscape}*(1+i)^{Y_{OM\_2}-Y_{current}}]$ =	$12,979.20
$FV_{OM\_3} = [Cost_{Annual\_landscape}*(1+i)^{Y_{OM\_3}-Y_{current}}]$ =	$13,498.37
$FV_{OM\_4} = [Cost_{Annual\_landscape}*(1+i)^{Y_{OM\_4}-Y_{current}}]$ =	$14,038.30
FV_{OM_5}	$14,599.83
FV_{OM_6}	$15,183.83
FV_{OM_7}	$15,791.18
FV_{OM_8}	$16,422.83
FV_{OM_9}	$17,079.74
FV_{OM_10}	$17,762.93
FV_{OM_11}	$18,473.45
FV_{OM_12}	$19,212.39
FV_{OM_13}	$19,980.88
FV_{OM_14}	$20,780.12
FV_{OM_15}	$21,611.32
FV_{OM_16}	$22,475.77
FV_{OM_17}	$23,374.81
FV_{OM_18}	$24,309.80
FV_{OM_19}	$25,282.19
FV_{OM_20}	$26,293.48
FV_{OM_21}	$27,345.22
FV_{OM_22}	$28,439.03
FV_{OM_23}	$29,576.59
FV_{OM_24}	$30,759.65
FV_{OM_25}	$31,990.04
FV_{OM_26}	$33,269.64
FV_{OM_27}	$34,600.42
FV_{OM_28}	$35,984.44
FV_{OM_29}	$37,423.82
FV_{OM_30}	$38,920.77
FV_{OM_31}	$40,477.60

FV_{OM_32}	$42,096.70
FV_{OM_33}	$43,780.57
FV_{OM_34}	$45,531.80
FV_{OM_35}	$47,353.07
FV_{OM_36}	$49,247.19
FV_{OM_37}	$51,217.08
FV_{OM_38}	$53,265.76
FV_{OM_39}	$55,396.39
FV_{OM_40}	$57,612.25
FV_{OM_41}	$59,916.74
FV_{OM_42}	$62,313.41
FV_{OM_43}	$64,805.94
FV_{OM_44}	$67,398.18
FV_{OM_45}	$70,094.11
FV_{OM_46}	$72,897.87
FV_{OM_47}	$75,813.79
FV_{OM_48}	$78,846.34
FV_{OM_49}	$82,000.19
FV_{OM_50}	$85,280.20

F. Step 5: Calculate Present Value at Year of Beneficial Use

Year of Beneficial Use, Y_{BFU}:	Y_{BFU} =	2021
Discount Rate for O&M, r_{OM}:	r_{OM} =	3%
Discount Rate for Capital and Rehab/Replace, $r_{capital}$:	$r_{capital}$ =	7%

Calculate Present Values for all Years above Year of Beneficial Use (Using EQ 4-2)

$Z = FV \times (1 + r)^{(Y_{BFU} - Y_{current})}$

Z is the cost at the Year of Beneficial Use and FV is the future value calculated in Step 4

For all costs occuring before Year of Beneficial Use, assume these costs are sunk costs in the year it occurs. Therefore, the future value as calculated in Step 4 will be used.

$Z_{capital\_low} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_low}, FV_{capital\_low}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $8,458,170.98

$Z_{capital\_base} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_base}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $8,722,488.82

$Z_{capital\_high} = if[Y_{capital} \le Y_{BFU}, FV_{capital\_high}, FV_{capital\_high}(1 + r_{capital})^{-(Ycapital - YBFU)}]$ $9,515,442.35

ZOM_Total =sum[FVOM_n*(1 + rOM)-(YOM_n-YBFU)] = $898,569.35

G. Step 6: Calculate the Total Cost for the Year of Beneficial Use by Summing the Adjusted Values in Step 5.

Ztotal_low = Zcapital_low + ZOM_total + $Cost_{rehab}$= $9,406,740.32

Ztotal_base = Zcapital_base + ZOM_total + $Cost_{rehab}$= $9,671,058.17

Ztotal_high = Zcapital_high + ZOM_total + $Cost_{rehab}$= $10,464,011.70